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AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

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[Translated for the American Bee Journal.]

Unedited Letters of Huber.

Memoir on the substances which serve for the nutriment of bees and on those which are of use in the structure of their dwellings. (1)

Sir, I do not pretend to give you advice, but in return for the confidence you so kindly repose in me, I will narrate to you two observations which I have made since my letters were published. (2)

Maybe you will think as I do, that they are not without interest, and that it is not to be wondered at that the economical science of beekeeping is yet in its infancy; seeing that to-day that which is most important to know is still unknown.

Distracted by other inquiries, I had given no attention whatever to the various matters which are a source of nourishment to bees, or which enter into the formation of their comb. I thought, as did Réaumur and all naturalists who have followed him, that the fertilizing powders of flowers were the primary substance of wax, and that the honey served only for the nourishment of the colony. It was not until 1793 that I began to doubt the truth of these two propositions; although they seemed sanctified by time and the testimony of naturalists, both ancient and modern, still I thought I might take the liberty to examine them, and here are the experiments which seemed to me the best suited to throw light on the whole matter.

On June 28th, 1793, I transferred a swarm from a glazed hive into an empty basket-hive, and gave them from 5 to 6 ounces (150 to 180 grains) of honey in a cup. I put into another a wet sponge, and shut them up in such a manner that only air could get to them.

That year the months of May and June had been rainy and cold. For several days the bees on which I was trying this experiment, had not left the hive, and consequently had not gathered anything. Therefore they had no pollen at all on their hair or on their thighs, and as that matter must needs be excluded, I thought this moment favorable for an experiment, which I wished to make with all the exactness of which it was capable.

The first of July the temperature had changed considerably; it was exceedingly warm. I could not see what was going on within my hive, but its opaque sides did not prevent me from hearing very distinctly the noise or cracking sound, which bees make when they are constructing comb. You can imagine my impatience, but I had sentenced the creatures to five days' imprisonment, and I would not free them one minute sooner than that; so that it was not till July 3d, that I determined, not without some fears, to lift up the hive and see if my conjectures had any reality.

First of all I saw that all my honey had disappeared, and I had still greater pleasure in discovering large pieces of comb of the most beautiful wax, placed and made with regularity by the prisoner bees. I might already have concluded, from this observation, that this comb had been made from the honey which I had given the bees when I imprisoned them; but yet there was one doubt in my mind. I was certain that the bees had brought no pollen on their hair into the empty prison-hive, but there was a good supply of it in the cells of the glazed hive which they had formerly inhabited: so that it was possible that they had eaten some of it the 28th of June, the day when I began my experiment, and that this matter elaborated in their stomach, had furnished them with the elements of the wax which formed the combs they made during their imprisonment. To remove this doubt from my mind, another experiment was needed, and here it is.

The hive had been opened and looked at in a room, the windows of which were securely shut; therefore, no bee could have gone to the fields. Attracted by the light they had clustered in a bunch in front of one of the panes of the window. I shook the hive over a table, and thus the bees which remained upon the comb, and also the queen, were forced to abandon it, and joined their companions. I was then able to detach all the combs; they contained but little honey and no fertilizing powder at all. I did not leave an atom of wax in the interior of this hive. I

(1.) The manuscript does not bear this heading, but the title we have here given corresponds with the matters observed by Huber.—(Hamet.)

(2.) The first publication of Huber dates back to 1798. It is entitled: Nouvelles Observations sur les Abeilles, addressées à M. Charles Bonnet, Genéve, 1 vol. in 8vo.

rubbed it with aromatic plants. I filled the cup once more with honey, and I made the bees go in again, and shut them up as in the first instance.

On the second day of their confinement I heard a noise which was a good omen. On the fifth we lifted the hive from its support and saw that the bees had not lost their time. They had constructed in their prison rows of white comb, as regular and quite as large as they had before. Now, I had scarcely any doubt but that the honey with which I had supplied them had furnished them the means to make all the wax which I had found in the hive. For was it not highly improbable that the pollen which they had eaten 11 days before, could have furnished them the elements with which to construct it? But as the fact was very important, I thought myself bound to make a more rigorous demonstration, and for that, it sufficed to repeat the same trials, with the same bees. For if they continued to produce wax, being nourished only with honey and water, there could no longer be a doubt but that the fertilizing powder was useless. Burnens then repeated five times, the experiment which I have just stated; he did it with the exactitude of which he has given me many other proofs, and the result of those subsequent trials was so exactly like that of the two first that it seemed proved, to us at least, that it is from honey that bees make all the *wax* they need.

What then is the use or those fertilizing dusts which the bees gather so eagerly? You know sir, that they interest them to such a degree that the weather must be very bad to keep them from this work.

M. de Réaumer has estimated the amount of pollen brought in yearly by a hive of ordinary strength, to be from 16 to 18 lbs. at least. (I perhaps mistake about the quantity, not having Réaumur at hand) and even should his calculations be a little over-rated, it would be no less clearly proved that it is a substance of primary necessity to the bees; thus you will not wonder at my desire to get at its true use. At first, I thought that the workers fed on pollen, and that it was to satisfy their appetite, that they sought for this agreeable and necessary aliment. I have taken the small balls of pollen from the legs of bees and found them of a sweet and tartish taste; they would have made a very good preserve, had they not left upon the tongue an impression resembling that which fine sand would have made. I needed new experiments to verify my supposition, and the following occurred to me:

July 13th, 1793, I placed a small swarm in a glazed hive; in it was placed a piece of comb full of pollen, and in addition to this, some cooked fruits so that the prisoners should not die of hunger, in case the pollen should not avail them for food. I shut the hive and made sure that only air could get to them. We watched these bees during three days. We often saw them lick the fruits we gave them, but never saw one plunge his proboscis into the cells which were full of pollen, and, in fact it did not seem to have any attraction for them. These bees had formed into a cluster in the top of the hive. On the 17th we disturbed this cluster with a feather to see if it did not hide some comb, but we found nothing, and we could guarantee that the bees had not built a single cell during their captivity. From this observation I could already conclude that the workers do not feed on pollen. It corroborated the former experiments, at the same time proving in another way that they did not find the elements of their wax in the dust of the stamens. This gathering of pollen then was for another purpose, and if it was not for themselves that the bees collected it during 8 or 9 months of the year, it must then needs be for the young bees of which they were not the mothers. Accordingly I sought the means of obtaining some light upon so interesting a subject in the history of these insects; the following experiment taught me what I did not know. You will be glad to have me state it in full.

I had a swarm in a leaf hive, the two small ends of which were of glass. July 17th, 1793 Burnens examined this hive thoroughly. His intention was not to leave a single cell which contained pollen. Therefore he scrupulously cut out all the comb which contained pollen and put in its place cells which contained honey only.

This hive was goverened by a young queen. I had prevented her from going out to seek the drones, and hence she was infertile when I commenced this last experiment. As there was no brood in her hive I was obliged to take some from another hive which was abundantly supplied. Burnens placed this brood in the first and second frames of the hive which had none. Then he took away the virgin queen and gave her to other bees to take care of; then he closed the hive with a grating which admitted air only. He resolved to observe the conduct and actions of the prisoners in these circumstances. On the morrow we saw nothing which we deemed extraordinary: the brood was covered with bees which seemed to be taking care of it.

On the 19th after sunset, we heard a great noise in this hive. We opened the shutters to see what caused it. The bees seemed to us to be in the greatest agitation; those which we were able to see, were running about in great disorder over the combs; the majority of them had abandoned the combs and had let themselves fall on the floor of the hive, and some were gnawing at the grating which prevented their exit.

They were so anxious to get out, that I feared lest a great number of them would die if we did not allow them to go out, and as they could not at that late hour go to the flowers, we gave them their liberty. All the swarm availed themselves of this, and for more than a quarter of an hour flew about the hive; afterward they re-entered. We saw them climb up upon the comb, and order was completely reëstablished; we seized this opportunity of shutting them up.

First we saw that the queen cells had not been continued: there was no worm in them and we did not discover an atom of the jelly which serves for bed and food to the larvæ destined to become queens. In vain too did we look for

worms, eggs, and food in the worker cells; all of it had disappeared.

(TO BE CONTINUED.)

A Curious Remedy for Bee Stings.

The Rev. W. C. Cotton, in his beautiful work, entitled "My Bee Book" (London, 1842), republishes a very quaint treatise on bees, by Robert Sydserff. In his preface, dated 1792, Sydserff says: "There is not in the whole book one page, nor even a line, which I do not know or have not reason to believe to be true; but as part of it may appear to be strange to ignorant persons, who know nothing of the nature of bees, the several facts are attested on the leaf immediately preceding the first page of the work, by persons who were eye witnesses to the same, whose characters are too well known to admit a doubt of their truth and reality."

Our readers will be interested in the truly heroic remedy proposed for curing bee stings:

"With respect to the poison which is left in the wound, from more than thirty years' experience, I have the greatest reason to believe that *the sting of one bee serves to mollify, prevent the swelling, and in effect cure the sting of another.* Innumerable instances have I known, which have confirmed me in my belief; two or three I will set down here, for the reader's information, which I think may serve for the whole.

In the year 1761, my brother, John Sydserff, who was then a child in coats, went into my father's bee garden, where a hive of bees lay out very big; the child having a stick in his hand, hooked down part of the bunch, when the bees immediately fell on the child, and for want of thought, he made no attempt to run from them, but stood still, crying vehemently. At that time I was at work in my father's chamber, and calling to my mother-in-law to know what the child cried so violently for, she ran to see, and no sooner came into the garden, than I heard her exclaim so loudly that I could not hear the child's cry. I ran as quickly as possible into the garden, and saw the mother running about and grasping the child in her arms, and endeavoring to save him from the furious bees. On seeing me she cried out, 'The child is stung to death;' and as she also was stung very much, so I did not escape being stung in several places, only in taking the child from its mother and running with it into the house. Many bees followed us, and I believe that more than a score were seen flying up and down the glass of the window on the outside, in less than half a minute. I found several bees entangled in the child's hair, and to prevent their stinging him I pulled them out in a hurry, bees and hair together.

As soon as I had extricated the child from the bees, my next work was to pluck out the stings that were to be found more or less from head to foot, but all over the head they greatly abounded. Several I pulled out of the tongue, and thirteen out and off one of the ears. Immediately applying to Mr. Robert Grimstead, apothecary, for advice, he said he could not tell what could be done, unless I was to anoint him all over with sweet oil. This I did as fast as possible; but I believe that it did the child neither good nor harm. The effect of this disaster was that he looked pale and appeared to be sick, but there was not the least sign of any swelling. Soon after this he fell asleep and lay sleeping in his mother's lap for several hours; and about ten o'clock in the evening (to the joy and surprise of his weeping parents), he opened his eyes and appeared to be perfectly recovered. We all went to rest for the night, and not a single complaint was heard of afterward.

From hence I take the opportunity of observing, *that if I am stung by a bee on the face, I generally swell almost blind;* if on the back part of the hand, the swelling ascends to the tips of my fingers; but if I am stung by two bees near the same place, the swelling is not so much; *and if I am stung by ten or more bees, the swelling is very little, or none at all. I would not of choice be stung by them, if it can be avoided; but after I have been stung once, I have no objections against being stung twice; and after I have been stung twice or three times, I do not mind if I am stung fifty or a hundred times.*

Some will be ready to say what I here assert is very unreasonable. It may appear so to those who have not proved it, but if I did not know it to be a matter of fact, I should not relate it. . . . . .

But as a farther proof of the above, in 1780, in taking an old stock of bees for Thomas Horner, Esq., in Mell's Park, out of an high ash tree, I was stung to such a degree that my flesh was as tender as if cut with lancets, but without any appearance of swelling; and as I had to rise the bees in the garden (which lay out very big), I went the next day to do it, and I felt such a fear of being stung again as I never felt before for upwards of thirty years. This was observed by Mr. Forbes, the gardener, who told me that I was more afraid of the bees than he was, which I believe at that time was true; but as Mr. Forbes was a stranger to what I then felt, it is not improbable that if he had been stung but half so much as I was the day before, he would have been afraid ever to have gone into a bee-garden more. However, as I expected no pay unless my work was completely done, I raised them up, and was again stung severely from head to foot. *But what was my surprise when I found these fresh stings to be of very great service;* the pain I felt was removed almost instantaneously, and the tenderness of the flesh, very soon passed off. On the third day I made new hackles and plastered the bees round to the satisfaction of my employer; and in doing this also I was stung very much, but these stings had not the least effect upon me, and I felt nothing of them, only when pricked by them.

Another proof I shall mention was in 1793, in taking a swarm out of a tree for farmer Luke Ashman, of Leigh on Mendip. After I had handed out the greatest part of the bees without finding the queen, I was obliged to search every small hole where my hand would not go, with my fore-finger. By this means the finger was stung to such a degree, that William Tapp, who attended me, did often take out three stings at once. When I had done, I asked him how many stings he thought he had taken from the tip to the first joint of my finger. He told me they were out of number. I then asked him if he thought he had taken out thirty. Yes, said he, and more than twice thirty. *I must observe that this finger felt a little benumbed, but no way tender or swelled, nor had it the least appearance of being stung at the first; but for days after black specks appeared in the skin. Upon another of my fingers I was stung by one single bee, which made it swell greatly and was very tender for several days after.*

Another proof I met with in the year 1784, which is the last I intend at this time to mention. It was on the 19th of May, in taking a swarm of bees out of a high elm tree, for Mr. James Fussell, of Mells, when I was stung on my fingers and on the back of my right hand, in nearly twenty places. On this hand there was not the least appearance of swelling, and very little tenderness; but on my left hand, which was accidentally stung by one single bee, the sting of this one bee caused my arm to swell to such a degree, that

I could not, without some difficulty, take my coat off in the evening. The next morning I had greater difficulty to put it on, and my arm was very tender for several days after. *From these circumstanc s I formed a resolution never to be stung by one bee alone, unless another cannot be had.*

Many more observations of the like nature have I made the last seven years past, and can add with certainty that the more I am stung the less effect I feel from it. . . . . Many have asked my advice when stung, and I have always recommended THAT ANOTHER STING THEM NEAR THE SAME PLACE, AND ALL WILL BE WELL. One in particular, who attended me at times for many years past, in taking bees out of trees and other places, when stung on the face asked me what he should do, and exclaiming he should be blind; my advice has constantly been, as I have just said, that another bee sting him near the same place and he will swell very little or none at all. But though in many respects he is a man of uncommon boldness and will climb a tree of any height, and put his hand into the hole of the tree among the bees, the same as into a bird's nest, yet sooner than take my advice, and make use of my infallible speedy medicine, he will be content to be swollen almost blind, and go blinking like an owl, for near a week together."

Poor Sydserff, with his infallible remedy, seems to have been unable to make a convert of one who had the benefit of being an eye witness to its marvellous efficacy; and it is not likely that his zeal will make many converts among modern beekeepers. We can easily conceive how small the demand would be for movable comb beehives, if the art of subduing the bees by smoke was as little known to the present generation, as it seems to have been to him. While few will attempt to cure bee-stings *Sydserff fashion*, many will agree with him that the pain and swelling from a single sting is often more severe than that caused by many.

L. L. L.

[For Wagner's American Bee Journal.]

Do Italian Bees Gather more Honey than Black Bees?

In reply to Mr. Bingham's indictment against the Italian bees, in the April No. of the Journal, we give some facts which occurred in our own apiary, and which convinced us that under some circumstances, the Italian bees gather more honey than black bees.

In 1860, the first year that we had any practical experience with the Italian bees, we had twelve swarms of black bees early in June. To three of these swarms we gave, when hiving them, Italian queens, procured from the apiary of Mr. Parsons, of Flushing, who had just introduced this variety to the American beekeepers. The hives were tolerably well filled with combs, built by the black bees, but before the young Italians began to gather stores, the honey harvest was nearly over. In August, owing to poor health, we not only made no observations, but could not be persuaded even so much as to visit the apiary. A member of our family, however, noticed that while the three colonies with the Italian queens seemed to be working vigorously, the other nine were doing little or nothing. In September we were able to open the hives, and found that *while the Italians had gathered a sufficient supp'y for wintering, the best of the others had only a few pounds.* The honey in the black colonies was so scattered that we were compelled to break them all up, adding the bees to other stocks. The Italians wintered well, and the next season we obtained from them about 350 pounds of surplus honey in the comb, and one large swarm.

We were not able to determine that year from what sources, unvisited by black bees, our Italians obtained their honey, but have since then felt satisfied that it was mainly from the second crop of red clover. While in some seasons this yields little, if any honey, in others our Italian bees have been able to build new combs and fill surplus boxes from this source, while the black stocks in our vicinity were actually losing weight.

We have little doubt that when honey abounds and superabounds in the nectaries of the blossoms, black bees will gather almost if not quite as much as Italians; but when it is scarce, and only to be procured by extra hard work, then the superiority of the "yellow bee" is very manifest. It will carefully search for such blossoms as have the shallowest petals, and will labor long and vigorously for only a small load.

When Mr. Parsons first procured this variety from Europe, he published the statement, then current, that the Italian bee had a longer proboscis than the black. This assertion was soon withdrawn; for it was found by most careful microscopical measurements of numerous specimens submitted by us to Professor Joseph Leidy, of Philadelphia, for that purpose, that the *average* length of the proboscis of the Italian bee was the same as that of the black variety.

Our experience that first season with the Italian bees has been repeatedly confirmed in our own apiary, and we could quote that of many others, if it was thought nec ssary. We will only refer to that of Gunther, the well-known assistant of the Baron Von Berlepsch, and to that of Mr. Robert Bickford, of Seneca Falls, N. Y. The former says that he found the Italian stocks were increasing in weight at the very time that the black stocks were growing lighter; and Mr. Bickford says he was not convinced that Italian bees were on the whole better honey gatherers than black bees, until a bad season demonstrated in his own apiary their very great superiority.

L. L. LANGSTROTH.

To Stick Combs in Boxes.

Cut them up into pieces of the proper size. Then stand near a stove-lid or any other iron plate, moderately hot, with the box in the left hand, held properly, and taking hold of the comb with the right hand rub the edge that is intended to adhere on the warm plate till a portion is melted, then clap it suddenly to its place in the box, when it will stick as well as if waxed with a brush.

S. SCOTTON.

Richmond Ind., June 28, 1872.

[For the American Bee Journal.]

Novice.

DEAR JOURNAL:—We have had a very busy month since we last wrote you, and many little successes and some reverses.

Honey came in steadily until just as the basswood began to bloom, when the extreme drouth prevented our index scale from showing more than one pound per day, and then ¾, and now, July 10th, only about ½ pound increase in twenty-four hours, although the basswoods are loaded with blossoms. This may change it, as the blossoms in the dense forests will last nearly two weeks longer, and our usual hopeful disposition prompts us to look for better things before the season ends. We have filled 9½ barrels of very thick honey, for which we are offered only 13¾ cents, delivered in Cincinnati. This seems a small price, but after all we think it much better than 30 cents for box honey.

By the way, how many of our friends are having trouble with leaky barrels? Just listen, and we will tell you a remedy. We don't want any 25 cents either for the information, nor in fact all the information we can give on any point, unless it be a stamp for postage, even if much time and many experiments have been made. What successes we achieve are freely at the service of our beekeeping friends, and all we ask is the benefit of their experience likewise. We have no fear that too much honey will be produced, or that the price will go too low. Now, then! Leaky barrels.

Make your barrels clean and *dry*, even leaving them in the sun a few hours before you drive the hoops on closely will do no hurt; and then pour in at the bung, quickly, about a gallon of melted wax, *boiling hot*. Now put in the bung, spin on one end and then the other, roll it over, pour out the wax, and if you have been quick only from ½ to 1 pound will be used and your barrel is as tight as a glass bottle, and the honey is kept pure and sweet in the receptacle that nature furnishes. The heated wax expands the air, forcing the hot wax into all crevices, as you will see when you draw the bung with a report like a bottle of soda. If you wish to see how neatly it does the work, look inside with a bit of looking-glass. We put two coats of paint outside, and then we have some honey barrels that it will pay to keep, so we shall always have them returned when we ship honey.

To be sure that the honey is free from dust, flies, etc., we make a little sack of cheese cloth, which is dropped into the bung hole as far as a wire ring, a little large, will allow it to go. The ring is sewed around the mouth of the sack. The faucet, or rather the molasses-gate, from the Extractor runs the honey into this, and when we stop work the barrel is closed to flies, &c., but is always ready to resume work.

And now about Extractors.

We really feel it a duty to give the result of some experiments, even though it should result in loss to a few individuals ourselves included. Most of our readers know that our first extractor, made about six years ago, revolved the combs inside of a stationary tin can. This we have always used until last season, when Mr. Peabody sent us one of his, and we liked their appearance; we sold a number, and in fact finally sold sample and all for accommodation, before we had used it more than one day, and went back to our old one. This season we sold the old one for $10, and fixed a Peabody so that it would strain the honey and run it into the barrel, as we supposed, in the best manner. Very soon our assistant complained of being tired, and finally that the Peabody machine would require a strong man to work it, and insisted that the labor was very much greater than our rude o'd machine.

"But it is balanced on a pivot, just see how easy it turns!" said we.

"Exactly, Mr. Novice, but do you not see that much power is required to get up the proper velocity and then much more power required to stop it quickly, which I must do when you are bringing the filled combs at the rate you do now? Give me the old machine and I will keep the full combs out of your way."

Theories wouldn't do there, Mr. Editor, so we looked for the cause. Gray & Winder's geared machine was then tried. The longer lever gave more power to stop and start the machine, and really requires less labor to turn up to the proper speed, but is so much less convenient in placing and replacing combs that we should hardly decide it more desirable. The trouble with both, and all *revolving can machines, is, the momentum of so much metal, combs and honey*, for the honey too is revolved until the machine is stopped.

Now, then, dear readers, our old machine was only a light wire frame, and very little power brought it up to the required speed, and so soon as the honey flew out it struck the side of the stationary can, so that the machine when it had relieved itself of the weight of honey, could be stopped with little effort *at once*, and without any serious shock to the machinery, or that "piece of humanity that supplied the motive power."

Mr. Editor, did you ever observe a woman doing housework and the way in which she would make the implements and utensils play and accomplish more in five minutes than we "lords of creation" could in an hour? Well, this is only possible with light machinery; ponderous, awkward implements cannot be made to "travel" at times.

We got ahead with our work the best way we could, and then with some strips of thin tin, folded for strength, we made a light, strong square frame, just large enough to hold two Langstroth frames 10 inches apart. Made a can large enough for it to revolve in, on a steel pivot at the bottom, and the gearing from a cast iron paring machine at the top to turn it by; fixed it so that the honey was delivered just at the proper height to run in the bung hole of the barrel, and the first trial brought forth an exclamation.

"Was it possible! that so little effort removed all the honey from a couple of combs." Since then our combs have been emptied with a

speed and ease that is utterly impossible with other machines. Any child can turn it, and the only caution is to take care that you do not go so fast as to throw brood and all out of the combs. We think it will pay to make your extractor only for one sized frame, in order that you have no useless metal to swing, and if we were to have several kinds of hives with frames of different sizes, we should have an Extractor just as small as it could be for each.

We have one thing more that pleases us. Who has not seen heavy ladened bees drop before the entrance of their hives and be obliged to take wing again before getting in? Even crawling up to the edge of the bottom board to the hive seems beyond their power, so we studied long and earnestly to get a simple, sure and effective door-step, and here it is, as it suits us. Saw off lengths of pine siding equal to the width of your hive, but before doing this, with plane or saw make one edge with sharp bevel, so that it will set close to the upper edge of the alighting board of the hive, when the other rests on the ground or sawdust. To keep this always in place, bend pieces of wire 2 inches long twice at right angles, so that one arm may be about $\frac{3}{4}$ and the other $\frac{1}{4}$ inch in length. Drive the long arm of two of these wires into the end of the door-step, close to the sharp edge, and when the short end is driven or pushed into the hive, our door-step is kept up close, and is hinged so that it will always rest on the ground. We prefer to saw into the step a little where the wire is driven, so that it will be fixed in the step and turn on the short end that is in the hive. These are readily removed when not wanted, and we think the number of bees crawling up them, (they should not be planed) during a yield of honey, would convince any one of their efficacy. See page 28, vol. 7. If spring scales tell the truth, a door-step, certainly *paid* them.

If Mr. Gallup don't stop being cross (see page 12) we shan't play with him. So, now! Mr. Gallup, are you sure there *is anything* you have been trying to get into our head after all. We really fear that you have made it necessary for us to tread on somebody else's toes *besides* the men who make the extractors. Send 25 cents for Progressive Bee-culture! Is that what you tell the rest of your pupils?

Bless your heart, Mr. Gallup, we "don't never send" 25 cents nor 50 cents nor $1.00 for such things. We get Beehives, Extractors, Patent Rights, books and papers piled all around us "an' we don't pay nothin' neither." If we scratched our head to understand all of 'em our better half should mourn more about our getting bald headed "so early in life" than she now does.

Mr. Adair sent us Progressive Bee-culture a long while ago, when first out, with the request that we should take time to look it over carefully and give it such criticism as we honestly thought it deserved, either in the Journal or by letter. This was kind and frank in Mr. Adair, and so we refrained from taking any notice of the work, because in our *honest opinion* it was a strangely mixed compilation of truth and error, containing strong, positive and sometimes almost harsh statements that our American bee-keepers will see the fallacy of at once.

For Mr. Gallup and Mr. Adair both, it is a fact that we have now a host of clear, sharp, intelligent men, who read our journals, and who can no more be led astray by false reasoning than those who have studied bees years *longer* than they have. Our soundest thinkers have no time to theorize and argue the matter. We have looked over Mr. Gallup's articles in vain to understand what great idea he has discovered, and he is right in saying, "we don't see it at all."

In his last article we do gather this, and we presume it is the "Adair" new idea: "That the queen prefers to keep her brood at the bottom of the combs in midsummer."

I would quietly ask the thousands who are using the Extractor and two-story hives, if this is so. If Mr. Gallup is writing for our benefit, why does he speak as though we had not tried giving a good queen room? Five years ago, we, almost alone, recommended the use of the Extractor constantly, to give the queen all the room she could use, and we have worked not one hive but from 40 to 60 and each has been most carefully studied. We are testing now a genuine Gallup hive, and cannot see that it works differently from what we had been lead to expect. To prevent misunderstanding, we distinctly state that we have no idea that either gentleman meant to mislead, but have dwelt so long on some pet arrangement that they do not see clearly. When Mr. Gallup presents as a "new idea" that the queen will raise more brood and there will be less likelihood of swarming by spreading the combs out horizontally, instead of the usual two-story, we think he has fallen into an error, but it will soon be tested in many different localities, so we will not disagree about it.

When Mr. Adair claims that by the same "new idea" (so Gallup says, not Adair) a colony can be made to gather as much honey and build the comb for it, as they would with empty combs constantly furnished them, we think he has fallen into a still more grievous error; but as we said before there are many clearer heads than Novice's to decide the matter, as they have others many times before. By the way, will not Mr. Gallup come around to shallow hives soon again.

In regard to box honey. We have this season one of Quinby's large frame hives with a full set of boxes, which was sent to us with the request to give it a fair trial. One of our best stocks was transferred into it in April, and a part of the combs from two hives were used to make the large frames all full. Of course the bees filled the combs with honey and sealed it all up, and then after waiting a length of time that enabled other stocks no heavier to give the Extractor more than 100 pounds, they finally commenced in several boxes, but have not up to this date more than one pound in boxes altogether.

Another stock that we compelled to fill some English vases, swarmed out twice, and then only went to work in earnest after we had given them another set of empty combs in place of all their honey and brood.

There has been no disposition to swarm at all in any of the other hives, over 60 in all, yet they are full of bees, and the queen lays in the upper combs as well as below, as they do every season; nor do we remember that they ever objected to so doing. We doubt if our locality could furnish 100 pounds of box honey from one colony, but it *has given* over 300 pounds of extracted honey. With the hope that some little item in this long article may benefit somebody, we remain as ever, yours, NOVICE.

[Translated from Kleine's Central Blatt.]

Queenlessness in Box-hives.

If a parent-stock is found to be queenless in the spring, having worker brood already, and also drone brood, it will be able to help itself, because it can rear a queen out of the worker egg. The bees will transform a worker cell, containing a worker egg or larvæ, into a queen cell, by widening and lengthening the worker cell. Such cells are usually placed upon the centre of the comb, and have the appearance of a compressed acorn.

If the stock at the time it happens to become queenless is full of bees, it may in from 10 to 16 days after the young queen has emerged from her cell, send forth a swarm, very often an after swarm. But should 3 or 4 weeks elapse before the young queen is hatched and fertilized, during which time the production of brood in the hive has entirely ceased, then will the stock fall much behind the others in the apiary, and the need of aid will be very great. This is also the misfortune, when the young queen is lost on her bridal trip, and the stock is not in a condition to save itself, having no worker brood of the proper age from which to rear a queen. Such a stock is in a fair way to destruction, unless the bee-keeper is in a position to aid it. And he is only in position to do this, should he have any reserve queens. The breeding and retention of reserve queens is not alone necessary to guard against queenless stocks, but also as a guard against many other mischances in the apiary, hence the breeder is advised to have on hand a certain number of young queens, corresponding to the number of his stocks. Here it may be well to make some remarks for the benefit of those who have not been engaged in the rearing of reserve queens.

Small basket hives can be used in queen breeding just as readily as box hives. As these hives are used alone for small stocks, their size should be about 7 inches, or 17 centimeter high, 4½ inches, or 11 centimeter wide on the outside, and of the same depth, so that they may contain three or four combs and an inner wood or glass door.

The time to begin queen rearing is as soon in the spring as the parent stock begins building drone comb and filling them up with eggs. You proceed in the following way: You choose from among your stocks one very well stocked with bees, especially *young* bees, and containing a large number of eggs, drive out a portion of the bees and place them upon the old stand, these bees being mostly old ones and of no use in queen raising. Now drive out a second time, when you will obtain mostly young bees, among which search for the queen. If you find the queen among these bees, remove her and place her with the bees first driven out; however, cut out first some comb containing eggs and brood, the parent stock now must be placed on its old stand.

The small box must now be quickly disposed of. Before the bees were driven out, one of the frames of the nucleus box should have placed in it a comb of sealed honey, another should be filled with empty comb, while the third should be retained for the brood cut from the parent stock, securing the combs with twine, in such a manner that they may neither wabble nor fall out. After the bees have secured the combs, these strings can be removed. These three frames are carefully placed in the box containing the driven out bees. The entrance is now closed with a piece of wire cloth or linen. When a sufficient number of bees have taken possession of the brood comb, it is carefully removed and placed in the box between the two other frames.

In case the bees refuse to take possession of the brood comb, fill the box with them, close it and place it in the dark for 2 or 3 days. In the same manner the second and third, &c., queen rearing hive is formed until all the bees driven from the parent stock are utilized. What remain over are returned to the parent hive. After two or three days the nuclei are stood out or hung out and the entrance opened. Should more than one queen cell be started, when they have been sealed shut, cut out the supernumerary ones and start new queen rearing hives, in which instead of brood, one queen cell is placed.

These nuclei require frequent attention, to see whether the queen deserted, whether it is healthy, whether, when on its bridal tour it was lost, whether it is fertile and has began to lay eggs. In the latter case, the queen is ready to be placed in a strong colony and this should be speedily done.

The breeding of reserve queens is very troublesome and requires a great deal of time, but its very great utility outbalances by far all these disadvantages.

Should it happen that a strong stock, capable of being divided should become queenless at a time when fertile queens were in the possession of the apiarian, the best advantage is to be taken of it in this manner:

So soon as you are convinced that the parent stock is queenless, you drum out a small swarm, say one pound of bees, place them in an empty box or basket, and give them a fertile queen from the reserve queens, secured in a queen cage, and place them on the stand of the parent stock, removing the latter to another place. Does the swarm accept the queen, which is soon discovered after the elapse of one, two or three days, if it does not appear sooner, the bees should be allowed to free the queen themselves, the bee keeper having placed over the entrance of the queen cage a thin piece of wax, which the bees will eat away and thus release the queen. If the queen is free, the swarm is allowed to re-

main in the empty basket or box for one day, so that the queen and bees may become thoroughly accustomed to each other. Now drive out for the second time the queenless stock, and give this swarm a fertile queen from the reserve queens.

The now almost empty parent hive needs attention, and all queen cells must be destroyed. The first swarm with its freed fertile queen will now be returned to the parent stock, and placed on the old stand. As this swarm has maturing brood in abundance, and the queen begins to lay immediately, under judicious management the swarm will increase so rapidly as to send off another and sometimes a second.

After the second swarm has accepted the queen, it can be placed upon a hive; in case that is not in a position to be used, the swarm is left in the empty nucleus box, which is somewhat screened from the sun. As this swarm has also a fertile queen which will begin immediately to lay eggs, it will in a few weeks be strong. The beekeeper has thus at least two strong swarms.

The cause of queenlessness in the parent stock is either occasioned by over-swarming or by the loss of the queen on her bridal trip. If the beekeeper has fertile queens at his disposal, the trouble is speedily remedied, as such a stock will instantly accept a fertile queen. It can be immediately released among the bees, yet it is best, first to cover the queen with honey, so that she will be cleaned by the bees and thereby attain the scent of the hive. If the beekeeper should have no fertile queens, it is best to give the queenless stock a small after-swarm, having a good queen.

Should a stock become queenless, and have as yet built no combs and have no brood, it will either return to the parent stock from which it came, or enter a neighboring one, unless it be immediately supplied with a queen. After-swarms must be carefully watched, and immediately on their becoming queenless, supply them with a fertile queen in a queen cage.

Far more dangerous is the loss of the queen by a first swarm, than that ocasioned by too frequent swarming or by after-swarm. To get them to accept a queen, will often require a great deal of trouble. An unfertile queen will on rare occasions be accepted; they even for a long time will show hostility to a fertile queen, while they have any brood from which to rear a queen. In such cases it is very necessary to drive out the bees, place them in an empty box and let them in it so long, until they are willing to accept the proffered fertile or unfertile queen. The combs containing brood must be placed with another stock having a queen, otherwise the brood would be lost. If you have no swarm to dispose of in that manner, drive out only the larger portion of the queenless stock and give them the queen, leaving in the hive bees sufficient to warm and care for the brood. When the driven out swarm have accepted the queen, drive out all the bees remaining in the parent hive, and unite them with the others, and place the united stock on the old stand, taking care to destroy all the queen cells that may have been commenced.

HEMME.

Defective Queens.

Just as disadvantageous as queenlessness is a defective or imperfect queen. A queen is defective or imperfect when she lays no eggs, barren ones, few worker and drone eggs, or drone eggs alone. The barrenness of a queen has its origin in either sickness, or some internal imperfection which will render impregnation and the laying of eggs impossible.

Partial unfruitfulness is thus caused; either the queen, owing to age or sickess, lays but few worker eggs mixed with drone eggs, while the masculine semen by which the eggs are fertilized, has exhausted itself; or, with a young, defective queen, the impregnation has remained imperfect owing to some defective organism.

A drone-producing queen, is caused either by the masculine semen being exhausted, or, when a young queen has never been impregnated. This last arises from several causes. When from long continued unfavorable weather, or some physical imperfection, as lameness, a crippled foot or wing, &c., the queen is hindered from flying out; or the queen may fly out at an inopportune time, when there are no drones, as early in spring or late in fall.

The causes of defectiveness in a queen are in part external. Therefore every queen should be carefully examined before being given to a stock. Should it have any defect whatever; does it want, for instance, an atenna, a leg, etc., or even a portion thereof, it is best at once to dispose of her. With already impregnated queens, an outward deformity will not involve total unfruitfulness, but as a deformed queen will never be as useful as a well formed one, it is always the most advantageous course to substitute for such a one a sound one.

In basket or box hive bee-culture, one seldom sees the queen, so cannot always judge as to its external deformities. Besides, mere outward deformity is not a positive sign of the imperfection of the queen, as she may have some internal deformity which will render her unfruitful. You can always judge safely as to the defectiveness of a queen by her brood. Is the queen entirely unfruitful, then the stock will have no brood. Queens producing barren eggs, lay them continuously, but they never develop; they are removed by the bees, but to be replaced by the queen. With such stock eggs alone will be found, but no larvæ or sealed up brood.

Is the queen only partially unfruitful, you will find worker and drone brood mixed together, and as drone larvæ in developing has not room sufficient in the worker cells, the bees lengthen them when the larvæ commence spinning the coccoons, and place a large cover over them, while the worker brood lies much lower and is more regularly covered. The brood has an uneven appearance.

With a drone laying queen, drone brood alone is found in the hive. The brood is close together, or in most cases is uneven, and has the appearance of the above mentioned brood. It is easy to distinguish between the drone brood of a drone laying queen and that of a queenless stock.

In the latter case, the brood is from a fertile worker.

Worker bees have incomplete sexual organs, incapable of impregnation, but often in condition to produce unimpregnated or drone eggs. A fertile worker is called a quack queen. She places her eggs usually in drone cells, where they can be had. You often find in one cell from 8 to 10 eggs, in a very irregular mass, often hanging on the edge of the cell. The bees nurse the drone brood alone, hence, a colony containing a fertile worker is thus easily to be told. A colony having an unfruitful queen from either of the above-named causes, must, just as a queenless stock, go to destruction, as the working force is daily diminishing, with no corresponding reinforcement from the brood. Often such colonies will furnish food for robbery, which will readily spread to the other colonies.

As defectiveness of queens is generally found in afterswarms and swarming parent stock, it is necessary to give them the closest attention, and if possible, to watch the development of the brood. Should, with such colonies, an imperfect queen appear, there must be no neglect in remedying the evil. This is very easy. Drive out the swarm, remove the imperfect queen, and give them a sound one. The bees will readily permit the change, as they instinctively know that it is the only way in which to help themselves. If you are able to give them a fertile queen at once, by daubing her with honey, you can throw her among the bees, and she will be safely taken. An unfertile queen should be kept in a cage for several days before it is freed. If you have no queen whatever, the bees should be set to queen raising, or used to strengthen weak stocks. The building of a hive containing a defective queen or a drone laying one, is much aided by decapitating the drone brood.

A colony containing a fertile worker is very difficult to cure, as the fertile worker is so difficult to distinguish from the other workers. The bees will cling so strongly to such a supposed queen, that they will destroy every unimpregnated young queen presented to them, and will even kill a perfect queen. The safest plan to adopt with such a stock, is to unite with them a small swarm having a good, fertile queen. The fertile worker will be supplanted by the workers of the added swarm.

Nienburg. HEMME.

[For the American Bee Journal.]

The Langstroth Hive.

I have been asked by over one hundred correspondents for my opinion on the Langstroth hive, spread out so as to contain the necessary amount of room on the ground floor, and thus do away with any necessity for the upper story. Now I have never tried it for myself, but *cannot see why* it will not work when properly managed. I will now refer the reader to vol. vi, No. 11, page 255, SIDE GATHERING HIVES, by Mr. Salisbury, Camargo, Ill. Mr. Salisbury is an experienced and practical beekeeper, and we can certainly rely upon his testimony. My largest twin hive was sixteen frames in width, and the results were entirely satisfactory. Allow me to make a few suggestions, not for the benefit of the practical beekeeper, but for the benefit of the novice. Make a few hives of double width, and try the experiment for yourself. Place a strong colony or stock into the centre of the hive, comb and all, using two division boards, one on each side of the comb. This confines the bees to the standard size for the time being. Now as soon as the weather comes right and the bees populous enough, remove these division boards, fill up each side with empty comb, or if you wish to make the stock extra strong, place in some maturing brood from other stocks; in the meantime, remove mature brood from the centre of the stock to the outside, substituting empty worker comb, so as to give the queen abundance of room in the centre for breeding purposes, and thus check swarming; for if attended to just right, and the keeping out queen cells, it will be apt to prevent swarming entirely; use the extractor freely, for if the bees fill up this substituted centre comb with honey, your object is not gained; that is, swarming will not be prevented. Now, providing those hives do not prove satisfactory, worked in this manner for a single stock, all you have to do is, put in permanent division boards in the centre and use it as a double hive, with two stocks in it, placing the entrances at opposite ends. Or, place a division in the portico, and allow both entrances at one end; then you can place on your upper story and you have two swarms in one hive, both marked on the standard plan. We saw such hives in the yard of J. S. Hill, Mount Healthy, Ohio. For wintering single stocks in those hives, reverse the outside combs, placing the combs occupied by the bees in the centre and the standard number of combs. Now adjust the division board and fill in each side with dried leaves, dried chaff, dried sawdust, or any such material; remove the honey-board and substitute the Bickford or Novice quilt, or some other material; pack the rear portion with some of the above material, fastening a board to keep it in place; contract the entrance and shade the hive from the sun, and see how they winter on their summer stands. I must give an entire article on wintering bees on their summer stands, as my visit to the South opened my eyes a little. The reader will readily see that if a few of those hives do not work satisfactorily for single swarms, they need not be torn down or thrown away, so there is no great risk to run, or nothing lost in trying the experiment. As double swarms can be worked in them to good advantage, and in some localities and to some individuals they may be satisfactory, while in other localities and to other individuals they may not. The same can be said of my large or twin hive.

E. GALLUP.

Orchard, Iowa.

The bees will be sure to serve themselves first, their first generation being always females.—BUTLER.

[For Wagner's American Bee Journal.]

How my Bees Wintered?

MR. EDITOR:—I see by the Journal that the loss of bees throughout the northwest is very general. Through this section of the country I should judge that three-fourths of the bees have gone the way of all earth. I do not think it was their honey, as they did not have, last fall, any in their hives, as there was no honey gathered in this section after the middle of September, or at least not more than was used in the daily consumption. The honey here was so thick that when the thermometer was below 65°, it was very hard to extract, and then took and required very rapid turning with a geared machine, and a machine without gearing would not empty it successfully without long turning.

The late gathered honey here was from flowers that bees do not in ordinary seasons work on to a great extent, and the late gathered honey appeared to have an acid taste. As a general rule, bees that have been put in winter quarters have suffered the worst. One man, who for years has wintered successfully in doors, this last year lost all he had, between 50 and 60 stocks. The best wintered and least loss were those on their summer stands, with a wind-brake of some kind around them, and the honeyboards taken off and dry corncobs put on the frames, and a common newspaper put over the cobs to stop excess of upward ventilation, with the entrance closed pretty small. So far the spring has been very cold and backward, and a great many bees have left their hives, and a sudden change would chill them so they never returned; and we have had more high cold winds than usual this spring, so that a great many swarms are not now any stronger than they were a month ago.

Would it not be a good idea if beekeepers would get as near as possible the loss in their respective neighborhoods, and report through the JOURNAL? Last fall I had 65 stocks, good, bad and indifferent; now I have 35 hives, with more or less bees, some weak and some very strong; but as soon as the weather gets warmer, I shall equalize and commence artificial increase, as I have plenty empty comb at present.

R. R. MURPHY.

Fulton, Ill., May 13, 1872.

[For the American Bee Journal.]

Bee Hives.

MR. EDITOR:—In speaking of bee hives, I would say they are getting to be a nuisance. There are so many now in this country that, after awhile, there will be nothing about them to get a patent on, except name, nail-holes, and the number of ventilating holes in it. The same old claims have been patented over and over again, till the country is flooded with hives. A great many hives are patented that are no better than the common box hive, and often prove a step backward in bee-keeping than a step forward. Such hives will flourish for awhile, but most beekeepers will come back to the Longstroth hive, which, I think, has induced some to make their hives as near like his as possible.

If there is any improvement to be made, let it be made, but do not rush to the Patent Office with every little improvement that is made. If it were not for this, bee-keeping would be farther advanced than it is; for instance, a man wishes to begin bee-keeping, he goes to several "hive sellers" to ask their advice about purchasing a hive; each one has the best hive (in his own opinion), and all want to sell him a hive. He is puzzled which one to buy, and don't take any.

When I first saw the American hive I thought it was just the thing, but I have tested it and would like very much to get rid of it. There are several disadvantages:—It cannot be opened and closed without killing some of the bees—it is a very cold hive, and unless well protected in winter the bees would suffer—it is a miserable side-opening hive, which I, like Novice, now detest, and wish I had never introduced it.

The Buckeye is another, which, last season, I thought the best hive in the Universe, but I have changed my opinion since last winter. It is an extremely cold hive, for it has too much space between the frames and the body of the hive, and the bees do not winter in them well; and unless it is a strong stock, it will not be very likely to get through.

Many say that the Langstroth hive is too flat, and the bees cannot get to their stores without leaving the cluster, consequently they do not winter well in them. I do not know whether bees can get their stores or not, but I do know I had bees in two of them for six years, and they are in them yet, and have always wintered on their summer stands, and have always come through strong. I am going to use it altogether after this, but I do not know how to dispose of the other hives.

C. E. WIDENER.

Cumberland, Md.

[For the American Bee Journal.]

Artificial vs. Natural Swarming.

MR. EDITOR:—We see that many persons, especially new beginners, do not see the advantages of artificial swarming. We *can* swarm artificially and keep our colonies, old and young, all full and strong, and will increase faster, gather more honey, and protect themselves against moths and other enemies and be in better condition for wintering; while, if left to natural swarming, some will swarm themselves worthless by becoming too weak, and being without fertile queens. Many persons do not understand that when bees swarm naturally they are without a laying queen often from twelve to seventeen days, and that a good prolific queen, under favorable circumstances, in that time will lay enough eggs for a swarm of bees. See what amount of young bees we lose by letting them swarm naturally, besides the many other disadvantages. There are many different modes of artificial swarming. I use the following: I have my queen cells

formed in strong colonies, where there is an abundance of young worker bees; when capped over, I remove them to a queen nursery. (I use a cheap, simple and easily made one, similar to the one described on p. 242, Am. Bee Journal of last May, by L. L. Langstroth.)

When hatched I introduce them while very young, and generally without any ceremony, to strong nuclei, composed of full sized frames and leave them there for fertilization, and until I want them for future use. If I want more increase of colonies, I will go and take from near the centre of a hive one or two frames full of brood eggs and larvæ, with all the adhering bees *except the old queen*, put these full frames in an empty hive, set it in some new location, some few feet away from any colonies that I take frames of brood from, and fill the spaces in the old stand in the middle of the hive with empty frames. I go to other strong colonies and serve them the same way, until I get my new stand full, except room for one or two frames. This new swarm is set in a new location and without a queen for about twenty-four hours, in favorable weather, when most all of the old field workers have returned to the parent hive, and the workers that are left are principally young bees and very easy to introduce a young queen to. I then take from my nucleus a frame of comb, queen, bees and all, and put them in the new stands. By sprinkling them with sweetened water, scented with peppermint, I have no difficulty in getting them to accept the queen.

Thus you see our old stand with their laying queens are driving ahead, their progress has not been marred; and if they are getting plenty of honey from the field they will fill these empty frames amazingly quick, and our young swarm has only been without a laying queen twenty-four hours. If we want honey we must have our colonies strong with workers, and in order to do this we must have them as near all the time as possible with good laying queens, and then give the queen room to spread herself. I would here remark, that the honey-extractor is a splendid acquisition for giving the queen more room. My nuclei are formed in standard sized hives, with two division boards in each, making three nuclei, one colony working out at front and one on each side, with the fly hole close to the rear end. The sides and ends are painted different colors, and the division boards have large holes cut in them, and covered with perforated tin or wire cloth, so as to keep each other warm. Bees are doing well here. We have had some honey dew.

E. Liston.

Virgil City, Missouri, July 1, 1872.

The past winter was the worst I have known in thirty years. Nine out of every ten hives have died, that were kept in the old fashioned box hives.

My own bees have wintered as well as common. In those hives where I separated old from young bees they never wintered better. They have endured one hundred and thirty days of confinement with perfect impunity.

Delhi, Ingham Co., Mich. John L. Davis.

[For Wagner's American Bee Journal.]

Management for Luck.

How shall we control a colony of bees to get the largest amount of surplus honey? We see from the Natural History or instinct of the honey bee, that they commence about the 10th of January to rear their brood. In the months of January and February, the queen will lay a small circle of eggs in two or three combs. In the month of March, the amount of brood is considerably increased, and to a still greater extent in the months of April and May, and in most cases when the last lot of brood is ready to emerge from the cells, or the last three lots are ready to hatch, the queen has all of her brood combs filled up with young brood. What brings on the swarming impulse with a colony of bees, and how are we to control it and cause them to store surplus honey instead of increasing stocks? When the hive is in the aforementioned condition, with all the brood combs filled with brood, and the queen no place to deposit her eggs, and the bees hanging idly in clusters on the outside of the hive, remove your honey boards and set on your honey boxes, not too many at once, but just as fast as you can get them to run into them.

Then as soon as you get them started nicely in your honey boxes, if the weather is favorable for swarming and honey abundant, go to hive No. 1, and lift out two frames of brood, with all the bees that are adhering to them except the queen, leave her in the old hive; put two empty frames in the place of those removed, putting a full one between them, and the bees will go right to work to fill up their empty space with new combs, and the queen will have plenty of room to deposit eggs, and will be perfectly satisfied with her home. Now increase the number of your supers and give them plenty of room, and you will increase their energy with a zeal to labor hard.

By this mode of management you give to your bees fresh newly made combs, right in the brood chamber; you give them abundance of room to work and prevent idle clusters at the entrance.

Take the brood combs, taken from hive No. 1, and also take two from hives Nos. 2 and 3, and set them in a new hive, and give thema queen cell, a queen cell just ready to hatch, or a young fertile queen. If you do this in the morning set the hive in the cellar till evening, about sun set, and then set them out on their summer stand, where you expect them to remain. If done in the evening, set them where you expect them to remain. In most seasons, one remove of combs will control a colony of bees, if you have got the right kind of hive; and in a very good season, when you find they are likely to swarm, you can remove one or two more combs from each hive and still control them.

The morning following this operation the working bees will return to their old hive, and you can hold the old hive on the storing of honey the whole of the season, if you want to. Now see if you let your hive swarm in the honey season, you mostly destroy the prospect of storing honey for that season.

My dear Bee friends, there is just as much principle about bees as there is in anything else. For instance, we go to some of our fairs, where they have got their horses trained up to a high speed, when they will make their mile in two minutes and thirty to forty seconds; then let some of the old fogy farmers bring out some of their old plow horses and put them on the track with the fast horse, and in one or two rounds see where the slow horse is. There is just as much in management of bees.

A word or two on Italian and black bees.

As regards the black bee. Every good season they swarm largely, and maybe before the next spring one-half of them will be gone. Now take the Italian and manage them right, and they will be a perfect success, and will not, like the black bee, run back, unless you make some mistake in their management. If you notice, the Italians fill the hive full of honey, nearly every comb, except a small place in the brood chamber. I opened three hives in the middle of October to introduce imported queens, and not an egg did I see. The cells contained honey and pollen, and filled up so closely in the fall that they made a perfect success, where the black bees will starve to death.

My experience is, that the Italians will go into the winter quarters with less bees than the blacks, and will come out in the spring with more, on account of the large amount of honey stored in the fall; and I would assist Mr. Hosmer, in his statement made at the National Convention, but I thought he made a little too strong a case for himself.

ALFRED CHAPMAN.

New Cumberland, W. V.

[For the American Bee Journal.]

A Freak in Bee-culture.

About the 1st of June, a neighbor transferred two colonies of bees into frame hives. All went on well until about the 18th, when one swarmed out leaving the combs destitute of bees, with some brood and no honey. The bees did not settle close by, though there were plenty of trees in the yard, but came over to my apiary, about two hundred yards distant, and settled upon a young peach tree within ten feet of my hive. It was hived in the same hive, but came out again in the evening. About this time another one swarmed and settled within ten feet of the first. It was hived, and the entrance was contracted to about ¼ inch. It remained, but in the evening out came No. 2 and went into No. 1. Late in the evening out came another swarm that had not been disturbed. It also came over to see me, and settled upon the top of hive No. 1, and gradually made its way in. This made three fine swarms in one hive. The weather being very warm, the heat in the hive melted the combs down, killing about one-half of the three swarms. Now what made the bees leave the stands in the first place, all leaving young brood, and in one, the comb was full of fresh larva and eggs, though not a great quantity of honey, and one without any? Why did they all come to one point to settle, there being plenty of trees between? I have always noticed a disposition to settle in the same place in the same apiary, but this being entirely obstructed by trees, and distant about two hundred yards, and no timber on the opposite of me for two hundred yards. I never saw bees leave young brood without some apparent cause, while these combs were all clean and nice, and the hives new, no moths nor ants about. Will some one give the solution.

A NOVICE.

[Translated from the Bienenzeitung.]

What is Honey?

Two articles in No. 6 of the Bienenzeitung of this year, show the necessity that the beekeepers should be acquainted with the nature and properties of honey, so that he, on the one hand, may readily distinguish it from analogous products, and, on the other hand, recognize the value of them as bee food.

When an individual plant is closely examined, and its elements investigated, it will soon be discovered that it is composed of organic matters, which readily separate themselves in nitrogenous and those without nitrogen. To this latter class, with which we have to do, belongs the Plantfiber or Cellubose (C_{12}, H_{10}, O_{10}). Starch (C_{12}, H_{10}, O_{10}), Vegetable Gum (C_{12}, H_{10}, O_{10}, + HO), Pectin, and the whole class of sugars and vegetable fats.

Our subject leads us to consider sugar alone of the last name products.

1. Grain sugar (C_{12}, H_{12}, O_{12}, + 2HO).

This sugar is found pure in many plants; in some it is found in the flowers, in others, in the young sprouts. It is also found in great abundance in fruits, viz., cherries, plums, peaches, figs, grapes, &c., which need but be tasted to discover the presence of sugar. The white efflorescence on dried prunes, and the white granulations on raisins, is grain sugar, which is also called fruit or grape sugar.

Tasting a dry grain of grape sugar, and then a grain of cane or beet sugar, the difference between the two will be readily distinguished, the former being less sweet than the latter; two and one half parts of grape sugar yielding only as much sweetness as one part of ordinary cane sugar: grape sugar dissolves less readily than cane sugar; one part of cold water dissolving three parts of ordinary cane sugar, while, in the same quantity of water, only two-thirds of one part of grape sugar will be dissolved.

Grape sugar is composed, however, of a mixture of crystallizing and mucilaginous sugar.

Compared with honey, grape sugar appears to be chemically similar.*

* It is an error to suppose that honey is composed of mucilaginous and grape sugar, because the original grape sugar is composed of crystallizing and mucilaginous sugar. Both are one body, showing themselves under two different forms, as ice and water.

One will not expect that the product derived from *pressing* the honey combs in which pollen, &c., is contained, would be the same as that derived from the use of the extractor. Here we have the pure grape sugar thinned by water, and perfumed by the volatile oil of the blossom, which lays claim to the name honey. This honey is produced by nature in the flower, and gathered by the bees and deposited in their cells. In these cells the water is evaporated, and, thereupon, the bees seal shut the chemically pure, thickened honey. This honey is not digested, as was falsely supposed, by the intermixture of formic acid, which has no connection whatever with the honey-sac, but the honey is found as was before stated, ready formed in the flower.

This requires, however, a fuller explanation.

Perhaps it has been noticed by many, that towards autumn unlike portions of starch are formed in the plant. Just as soon as the air of spring penetrates into the plants, the starch begins gradually to dissolve into a solution of sugar, and to ascend as well into the newly developed branches as into the developing flowers.

Probably there is at work in the plant a not well known substance, called Diastase, which being dissolved by the warm spring weather, changes the starch into glucose and sugar. It is well known in the manufacture of sugar from starch, that sulphuric acid and heat will produce the change from starch to sugar. This starch sugar, thus produced, is now a rather common article of commerce, and is much used in adulterating cane and beet sugar.

Unripe apples and pears will become blue if they are boiled and brushed with tincture of iodine—a sure sign that they contain starch. Ripe apples will not show this reaction, the starch having disappeared, being changed into sugar. It is here to be noted, that a chemical change takes place whereby the starch is changed to Dextrine and sugar. What was accomplished by heat and sulphuric acid, is here brought about by the warmth of the plant, and possibly also by the intervention of the substance—diastase. Here, as in the flower, pure grape sugar or pure honey is produced.

The discovery was long since made, that grains of barley, when germinating, contain sugar, of which fact man has availed himself in making beer. The sugar in the germinated barley being dissolved by tepid water, is manufactured into beer. During the period of germination, the gluten contained in the grain dissolves; this forms the substance named diastase, through which, in the same manner, is the starch transformed into gum and sugar, just as it was accomplished with sulphuric acid.

Steep ½ oz. of roughly ground barley malt, which one may readily make himself or obtain from any brewery, in 2 oz. of lukewarm water; let the mixture stand for some hours in the vicinity of a stove, or in the sun, and then strain it through a piece of linen. The fluid thus obtained will contain the dissolved sugar and the before mentioned diastase. A quarter of this, thus obtained malt decotion, is now to be stirred into hot starch paste, prepared from a ¼ oz. of potato starch, and 2 oz. of water, and heated to not over 65° Celtius, until the paste has become a thin fluid and transparent. It should now boil for some time at an increased temperature, strain it through a cloth, and permit it to dry in a warm place. The substance thus obtained is Dextrine, Starchquen, or Gommeline.

You proceed with the remaining portion of the malt decotion in the same manner as with the former, only heating it for some hours at a temperature of from 70° to 75° Celcius. Dextrine will first appear, which will change to starch sugar. Through evaporation, starch syrup will be obtained, which, by remaining undisturbed, will become crystallized.

In the fermenting process, Diastase effects the change. The taste of the malt is sweet and gummy, as soon as the starch of the barley begins to change to Dextrine and sugar, which change is hindered by the drying of the malt.

If one wishes simply to obtain for feeding his bees, the concentrated extract of malt, which, by the way, contains also in solution gluten, he need go no further; but ours is a different question. There is a much easier and cheaper way of arriving at this result. The malt decoction contains in solution grape sugar, which may readily be purchased and dissolved in water, when there will result the same sacchrine mass as is obtained from malt, lacking only the small portion of gluten contained in the barley. Is it desirous to introduce some nitrogen, you need but add water filled with the pollen of flowers or honey that has been *pressed* from the combs. *Expressed* honey holds in it nitrogenous pollen, and hence the bees can by this means supply themselves with food and also their brood. As to what may be the cost of malt and its transformation into bee-food, it may be remarked that about 3 cwt. of malt costing 15 fl., would not yield more saccharine matter, than 1 cwt. of grape sugar costing 8 fl.

As before remarked, pure honey will be perfumed by the essential oils that are produced by the flowers, which grape sugar produced from malt fermentation or other process will want, so that true honey can only be produced under the following conditions:

1. The grape sugar must be prepared from mucilaginous as well as crystallizable sugar.

2. This artificial honey must be mixed with some essential oil, so that it yield the aroma of flowers.

As before remarked, that grape sugar or honey has not the same sweetness as cane or beet sugar, so that if the apiary close by a sugar manufactory yields over 6 cwt. pure, little colored, and slightly flavored, but very sweet tasted honey, then can it safely said to be no grape sugar or honey, but simply a mixture of grape sugar and cane or beet sugar. Were these sugars chemically analyzed, not the slightest difference would be found. Cane sugar, as before remarked, is known to be composed chemically of (C_{12}, H_{10}, O_{12}, + HO), and grape sugar of (C_{12}, H_{12}, D_{12}, + 2HO). The sweetness of the materials guarantees cane sugar has remained in the cells. When experts taste this sugary substance, they will not disdain to connect it with crystallized and liquid sugar, and thus ren-

der it clear that the mass in regard to consistence is composed as we are accustomed to find honey—it becomes also in jars partly crystallized and partly fluid.

The feeding of bees upon grape sugar was before mentioned, and gave us this experience, that when chemically pure it was useful as a bee food. And why should it not be? Is not grape sugar and honey the same? In the former the aroma alone is wanting.

It is to be remarked that there are but two kinds of sugar that can be used as a bee food. Cane sugar, grape sugar, or that almost similar to the last, honey; but one difference is found, that grape sugar can be transformed into either crystallized or mucilaginous sugar. The crystallized grape sugar is certainly pure, while grape sugar syrup may not be free from sulphuric acid. As the sugar syrup has been the means of destroying whole hives, whose inmates have fed upon it, it is well to have this so-called syrup chemically pure before feeding it to the bees. If one would mix chemically pure grape sugar syrup with a sufficient quantity of crystallized sugar, and perfume this with a small quantity of the oil of some well known flower, the product would be artificial honey, which as regards quality and aroma may be compared fearlessly with that product which our bees gather from the flowers and store in their hives.

When the bees are allowed to partake of the decoction of malt—thickened by evaporation—they will extract the grape sugar; but it is not always advisable to allow this, as the dissolved gluten remaining in the extract, will in certain temperatures readily undergo changes, so that the mass will undergo a process of fermentation. This fermenting honey, used by the bees in feeding their brood, will act like the fermenting Havana or Cuba honey—introduce foul brood. Who really, in analysis, has examined the above mentioned means of subsistence, when they have been partaken by the bees, and does not see in them a cause of this brood pest, and undertakes to ignore the discovery made by him and others before and after him, he may feed his bees that analyzed means of sustaining foul brood!—he may feed them the fermenting malt extract, in order through experience and disaster he may become wise. Nevertheless, the main point must not be overlooked. Before feeding, he should establish the purity of such means of subsistence, or have it ascertained by others, so that it will be in a known condition. It is not to be denied, that in this there is no absolute certainty to be attained, but it can be judged by its outward appearances, which are oftentimes deceptive; which, in the light appear as nothing less than dangerous aids, in that their form and substance wholly disappear. Should the brood after the sixteenth day partake of this analyzed nourishment in a raw or undigested condition, it will not fail to bring on foul brood. Prove that it is not so!

A. LAMBRECHT,
Chemist and Beekeeper.
Buraum near Burstein.

Time is *money* to men—and *honey* to bees.

[Translated from the Bienenzeitung.]

Extracting Honey in Cold Weather.

At the convention of German Beekeepers, at Darmstad, Major Von Hruschka remarked that the Honey Extractor had not yet attained its full usefulness. Heat must be introduced so the honey can be extracted in cold weather.

I reflected over these remarks and became convinced that the introduction of heat into the machine would not work, the combs requiring a longer time to render the honey fluid, than could be obtained by this means. I thought of another plan, which two years ago I communicated to various beekeeping friends. I would willingly have made a trial of my plan the first fall after discovering it, but the honey harvest was short, so that all the honey had to be given to the bees for wintering. Often I have to purchase honey to feed my bees. Towards the end of October, 1871, an unlooked for opportunity occurred for the testing of my discovery. Herr Klein, Domainenrath of Tanbuckshof, invited me to spend a few days with him, and aid him to prepare his bees for winter, his official duties having prevented him from attending to them. On my arrival the bees were immediately taken in hand. They having quite a quantity of surplus honey, and as Herr Klein had no thought of using the Extractor, but thought of melting the combs, I remarked to him, "Let us prepare a room, and to-morrow we will use the Extractor."

This was immediately done. With the aid of two assistants, the combs were placed in a warm room. In an hour everything was in readiness, the Extractor fastened firmly to the floor with wooden screws. In three hours the experiment was made with these combs standing nearest the stove, and behold! it went just as easy as though it were midsummer. The next day quite a quantity of reserved honey was extracted. What joy this gave Herr Klein, I cannot describe; it saving him so many whole combs, of which he was in great need, having had to destroy many hundred beautiful combs on account of foul brood, with which his apiary was a few years back afflicted. At present Herr Klein's apiary is a model, and one of the finest to be seen.

W. GUNTHER.

[For the American Bee Journal.]

Controlling Fertilization.

MR. EDITOR.—In a communication to the Journal last fall, I confessed that all my attempts to have queens fertilized in confinement had been complete failures, but then said I had devised a plan in which I intended to succeed this season if anybody did. During the winter I made the bee my chief study, and held an extensive correspondence with other prominent beemen, and by the middle of April I decided that the thing could not be done. It is against nature, and all attempts will fail. I am also of opinion that those who say they were successful *only* think they were; they were not positively

certain of it, and I want nothing in the Journal *but what the writers are positively certain of.* I have not attempted to control the fertilization ofbut *one queen* this season, and that was as follows: About two o'clock, June 18th, I picked up a fine large queen about twelve days old, surrounded by a handful of bees. I found the hive she came out of, her wings were defective and she could not fly. I had a few days before read Waite's plan, and so run in the room to get just such a wire cage or cylinder as he describes. By the way, I have all such devices by me, showing that I have left no stone unturned to succeed, if that could ever be done.

Well, I put the queen with six well selected drones just leaving the hive—not returning to it—and set it in the sun, leaving it at least two hours. Waite says *one.* When I went to it there was at least a quart of bees hanging over it, and a great many drones. I then took it with all the bees hanging to it and set it at the entrance of a weak and queenless nucleus, to which I gave queen and bees late in the evening. Five days after she was laying regular in worker combs. Whether she met with the drone in the cage or before I put her in, or whether she met with a drone at all, I do not *know,* but rather think she has from the regularity of the brood and eggs. I will tell you all in the next number of the Journal. I had a case similar last August in which a defective winged queen that could not fly, did actually manage to become impregnated, but this queen was removed by the bees in March.

Well, friend Salisbury, you went to a cost of $30, to put up your *Fertilizing Tent,* but you are not the only man, for a great many others did the same. Please send in your report of *honest failures,* for they are nothing *else.* But should you report contrary to all expectations, *success,* I will immediately jump on the train and go with all speed and meet friend Furman and Novice in your tent, and will then describe the plan of the tent I had devised to build in the spring, and I think that if success is ever met with, it would have been by my plan as the most natural and least troublesome. My plan is as follows:

Make the base of boards about say ten feet square. I intended mine to be at least five feet high, with a pole in the centre to hold up the top of the tent, which I intended should be about ten by twelve feet higher from the top of the wood work, making altogether about twenty feet from the ground. Around this tent, just outside, I intended to set twelve nuclei, three on each side, with the main entrances outside, but an entrance at the rear end of each, passing into the tent for the queen and drones. When the queen was two or three days old, the front entrance was to be adjusted so that only the workers could pass out, but an entrance at the rear end of each passing into the tent for the queen and drones. Should there be objections to a rear entrance, the front entrance could be placed against the tent and so adjusted that the queen and drones could only pass into the tent. The entrance to each nucleus was to be marked with different colors, so each queen would find her way back. But whether the drones would ever find their way back from the tent, and whether the workers that should happen to pass into the tent would not get bewildered and lost, is what bothered me. Will some one who has built a tent try the plan, as it is the most natural of any I have ever yet seen described. I have not sufficient faith left in regard to "Controlling Fertilization" to try it myself.

The queen and drones may think themselves in a very unnatural position inside the tent. I am as anxious as any one is to see some one succeed, but before they patent it and trumpet it about over the country, I want them to be *positively certain* they are not deceived, and thus deceiving beekeepers. This is what we should all guard against.

R. M. Argo.

Lowell, Ky., July 12, 1872.

[Translated from Kleine's Centrablatt.]

A Simple Method of Suppressing Afterswarms.

At the meeting of the Apiarian Association at Knesbeck, November 22d, 1871, the following question was offered for debate: What is the best way of preventing immoderate afterswarms?

The future prosperity is in many cases endangered by too much swarming, unless the beekeeper returns to it the requisite bees. It appears to me far simpler and better should the beekeeper prevent the departure of the swarms. My plan to accomplish this is not difficult, and never failed me in about 28 years, during which time I have had it in operation.

So soon as the young queens have sung for three evenings, you may expect that on the fourth day a swarm will leave. The parent stock, which should not swarm again, on the third night of this singing, after the bees have stopped flying, raised from its bottom board and placed on two equal circular blocks, which have a diameter of two inches, so placed as to allow the free ingress of the cool night air. Generally, on the following morning, all the surplus queens will be found upon the bottom board. Are they not found there, it is a sign that the swarm is not yet ready to leave, and that there is no danger of their leaving that day. Before the bees begin to fly, the two blocks must be removed, and the hive resume its position on the bottom board.

My treatment has always shown itself to be an unfailing remedy, especially in large straw hives, where the fly-hole is at the bottom. I consider it much easier and safer than that of cutting out superfluous cells. I base the success of my method on the present internal condition of the young queens and their protecting bees. Lastly, they surround in parties their chosen queen as a necessary defence against the other opposing divisions.

Through opening of the hive from beneath, and perhaps through the entrance of the cool night air, is this guard system destroyed and the killing of the queens follows. *This will occur only on the day when the swarm intends to take its departure.* The cold draft may operate on the

bees just as wet, unpleasant weather to a swarm, when the bees set about the destruction of the superfluous queens, apparently because the proper swarming time appears not to have arrived.

I here give my plan to my honored beekeeping friends, wishing that it may bring an advantage to their pursuit, and the desire also that they will publish, through the *Bienenwerthschaftliche Centralblatt*, the results of their experience.

EDWARD PAULS.

Plettersdorf, near Godesberg.

[For the American Bee Journal.]

Various Items.

MR. EDITOR.—The busy season being now nearly over, I have leisure to write a little for the Journal, which is now becoming more valuable on account of our friend Langstroth's many and valuable contributions. His article in the June No., p. 267, on Artificial Queens, and the one on the "Color of Queens," in the July No., p. 2, correspond exactly with my own experience. So well satisfied am I of the correctness of that theory, that I put all my cells in strong colonies, and never cut them out until the tenth day; but the ninth is soon enough. It is not always safe to wait until the tenth day, for, on these occasions, when I went to cut them out on the tenth day, the first queen had already emerged, and had in one instance destroyed all the cells but two. On another occasion, where there were twenty cells from an imported queen in one frame, the first queen had emerged and destroyed three cells.

The present season is a very poor one. Early in spring we had every sort of fruit blossom except peach, but, on account of the cold weather, bees done but little except from April 14th to May 1st. The weather during that time was settled and very pleasant, but not very warm; yet bees done very well until June 16th. From that time to the present we have had a very poor prospect for bees, the weather being very dry, especially the last two weeks, very hot and sultry, the grass scorched up, the bees therefore at a stand still, doing nothing. I had reduced my stands to some thirty by sales to April 20th. By prudent management, I have taken about 480 lbs. extracted honey, and only about 35 lbs. cap honey, and increased the stocks to sixty-three, and have them all except six or seven in fix for winter. Novices must not attempt to do as I have done in such a poor season, which I consider almost as poor as that of 1868. I do not include the Great Novice in my warning, for he is equal to any task with bees, as is evident from his communications in every number of the Journal.

I have for the last ten days been compelled to feed every nuclei rearing queens, and it is at such times very costly and troublesome; besides, who can tell the mortification of a queen raiser to have near half his queens meet bad drones at a certain time. A few black stands were brought into my neighborhood last spring, but the black drones are all killed off by this time.

Had this season been a good one, I had counted on an increase to 100 stocks, and at least 3000 pounds extracted and 1000 pounds cap honey. This would have been a low estimate, with thirty stands rightly managed in a good season. I only had about five or six natural swarms. All others artificial.

This season has demonstrated the value of the extractor. Those who had no extractor got little if any surplus honey. There is less working in caps this season than I ever knew since 1868, and yet the body of all my stands was so full that if I had not extracted half, the queen would have been crowded out of her brood nest. The weather on the 20th of June was too cold for bees to enter caps.

R. M. ARGO.

Lowell, Kentucky, July 11, 1872.

[Translated from the Bienenzeitung.]

Spring Feeding.

I count judicious feeding in spring as one of the most important duties of the beekeeper, as in many years the success of the honey harvest depends on it. Alas, in my locality judicious spring feeding is wofully neglected. What attention is given to it in other localities I cannot say. The danger of feeding the bees outside of the hive is that instead of increasing they will gradually decrease, and often the colony will be entirely lost, or remain so weak that it will not be in a position to swarm.

I have often wintered stocks weighing, in autumn, including box, fourteen to fifteen pounds, which seldom failed to swarm, and return a good result. After the bad year of 1862, I fed quite a number of my stocks that had consumed all their honey and were not yet able to fly, and they became good strong stocks. When such poverty exists, one must feed by measure, so that they may be enabled to maintain their existence; and, when they have taken their purifying flight, give them their food about every eight days. How much in every eight days to be given to such stocks, depends on the populousness of the stock, and every one must judge for himself. Dissolved candy can be fed as well as thinner honey; the former for a month or longer, to those stocks not having a particle of honey, and are unable to bring in a particle of pollen; still the bees will remain healthy. The candy syrup should not be made so thin, nor should food honey be mixed with water. Feeding by small quantities, as is here usual, is injurious, as it is apt to incite brood rearing, and call for the gathering of pollen, and thus the bees are lost in our cold and changeable spring weather. To thin the food honey with water, as is taught in many books on bee-culture, is unnecessary and often injurious, as it increases the tendency to fly out; and the bees will thus be defrauded and not obtain that advantage from the food which they should. The opinion prevails widely here that when the bees begin to carry in pollen and are right active, they should be fed with old honey. True, should the weather continue uniform, but in our variable, changing from

warm to cold, spring weather, more bees will be lost through this treatment. Stocks, having honey, I do not feed; they can take care of themselves. With us, colonies should gather their principal supply from buckwheat, as they seldom obtain honey in quantity from clover, and heath flowers. (*Ericaceae.*) What is obtained from rape is generally used by the swarms. Only in good years, such as previous to 1868, is there a surplus of rape and clover honey in our stocks; far more abundant is buckwheat honey. The best and heaviest young swarms will always be those near a good field of buckwheat. It begins to flower about the end of June, and continues till the beginning of August. They will always obtain for themselves an abundant supply for winter. It will often equal the parent stock.

In rich buckwheat regions, the parent stock will swarm once and often twice, has already gathered something for its support, are soon over their swarming period, while earlier swarming parent-stocks, when, as it often happens, the weather is unfavorable, and the pasturage gives no full yield, have to endure three weeks of idleness after swarming, and often when finished have neither bees nor honey.

As an instance of the yield of honey in this locality, I give you the product of my apiary for three years, which were counted good ones.

	Stocks.	Honey.	Wax.
1868	32	1000 lbs.	50 lbs.
1869	34	400 "	23 "
1870	34	750 "	37 "

The years 1868 and 1870 concur. The difference in the yield of the two years lies in this, that I had stronger swarms and disturbed them less. On account of the unfavorable spring of 1870, and the failure of the rape crop, and too little feeding, my bees did not swarm only in July—on the 23d I received two first swarms; afterward all went well. The swarms and the parent stocks reached in weight 60 lbs.; after that, on the 27th and 29th of June, from necessity, they had to be fed.

J. Bauman, *Mayor.*

Heilegenstedten in Holstein.

[Translated from the Bienenzeitung.]

The Defence of Comb Closets.

For twelve years I have used the movable comb system, and have tried many methods to preserve the combs from the attacks of the moth, till I at last made the discovery that when you hang the combs free in the air, the moth will not disturb them; and as soon as it is warm enough in spring, I take my combs out of the empty hives, where they were stored for the winter, and hang them upon a rack, two inches apart, in a strong draft under the roof, and not one comb has been visited by a moth.

Where the use then of chests, sands, ashes, bran, &c., the packing and unpacking, and the use of the Extractor, which even does not wholly clean the combs, and leaves unnecessary work for the bees in removing from the cells the material used in filling them?

I allude above to empty combs, for of course those containing pollen and honey dare not be placed in the open air, as the bees would discover them; and they cannot on the other hand be placed in chests, in ashes, sand, &c., where ants, wood-lice (Blatta onentales) would surely find them out and destroy them, even if mould, claiming them for his own, would render them valueless.

Combs containing honey and pollen I preserve in a comb closet, which will hold one hundred frames. Hereby I have the convenience to have at hand in a moment the needed combs. Truly, I must often look after them and fumigate them, to protect them from the moth, &c., and to drive away and destroy the ants, but this is much pleasanter than unpacking chests, and soiling the clothes, with ashes, bran, &c., losing time and breaking combs. Therefore, honor to the comb closet.

Moreover, "*De gustebus non est disputandum.*"

Teofil Zukowski, *Forester.*

Budewitz in the Buckowina, May 27, 1872.

[For the American Bee Journal.]

Gallup's Reply to Furman.

In the May number Mr. Furman goes somewhat into figuring, and says he supposes Gallup wanted to draw him out, so that the rest of the beekeepers might have a little fun. I was informed that at the State convention he went almost crazy, so that it took the combined efforts of the chairman of the convention and Mrs. Tupper (who has, we understand, a peculiar faculty of quieting his nerves), to prevent his committing suicide or doing some other harm to himself. Now, why this terrible agitation and excitement? Gallup and Hosmer *barked too loud.* The little man had gone into a sort of Rip Van Winkle sleep as regards beekeeping, and on awakening he heard such a loud *barking or braying* from Gallup and Hosmer that he was entirely beside himself, and hence his excitement.

Now he requests me not to be offended at him, and to tell you the plain facts, Mr. Editor, I have actually laughed in my sleeve so much since reading his article, that one set of sleeves is entirely worn out. He no doubt will say, I wore them out piling brush. The sleeves are worn out, no mistake about that part. Mr. Furman, in his figuring, has made a slight mistake of a few thousands; he has deducted nothing for honey or pollen. When he says that a queen occupies a hive of two thousand cubic inches with brood, we suppose that every practical beekeeper understands how that is occupied. Every comb is occupied with brood, but not every square inch. It is also occupied with honey and pollen for winter supplies, especially in the honey gathering season. Now, we must deduct one-third for honey and pollen, and then we will see that in a hive of four thousand cubic inches, we have a trifle less than four thousand eggs per day, for twenty-one days, supposing the four thousand inch hive is occupied in the same

proportion as the two thousand inch hive. Our late friend, Mr. Wagner, said, if I mistake not, that a queen under favorable circumstance would produce in eggs three times the weight of her own body in twenty-four hours. Again, when I read in a small pamphlet of Mr. Adair's, that a queen would occupy a hive of four thousand cubic inches with brood, I understood it to be occupied in the usual manner. But I thought either Mr. Adair's climate was different from ours or he was mistaken. Somebody was mistaken, and instead of crying out liar, &c., we went to work to find out where the mistake was, and we soon found that Gallup was mistaken. Mr. Adair was correct. Our friend in his figuring and ignorance of the manner that a queen occupies a hive, has made a slight mistake of about seven thousand—not much mistaken in a queen's laying something after all. Again, he says he would have hired some poor man to take his place in the harvest field. When the reader understands that a boy fourteen years old, can prepare with a good team and the necessary implements, and put into crop, one hundred acres of our prairie, and that every poor man can get a team and land on shares, so that when we go to harvesting we have to press our wives and daughters into the harvest field, and every available man from our cities and villages, will understand that his talk about hiring is all moonshine.

It cannot be done. So far ahead of the supply is the demand, that *to-day* the harvest hands are talking of five dollars per day for the present harvest. My youngest daughter has driven the harvester for the past four seasons.

Again, about one of my hives losing its queen, and the product being small, the queen began to fail of old age, and by the time the bees had superseded her, the swarm had dwindled down to one-fourth its natural size. We don't know but he can raise queens that will breed bees under these circumstances, that will gather more honey, for thirty days in succession, without a queen than with one. But our bees are not of that breed. Send us a queen of that variety and we will blow you higher than a kite.

Again, we did not suppose that any beekeeper was so green as to understand us as saying that the honey dripped from the trees, only that the blossoms were completely smeared. As I have never sold queens, patent hives, &c., I do not see very well how I am to get the dollars out of the Novices of Iowa. Mr. Grimm has been to Italy and has seen the Italians in their own country, therefore, we, being personally acquainted with him, take it for grant that he is as good a judge as Mr. Furman can possibly be, and to-day we would as soon send to Mr. Grimm for a good queen as any man in the United States.

Then, about insulting queen-breeders. The reader will understand that I never have said that all light-colored queens were impure, but that extra light-colored queens and three-striped workers were *no test* of purity; neither is a queen always impure because she is dark-colored, and under favorable circumstances produces dark-colored queens.

Read Mr. Langstroth's articles on queens in June and July Nos., for they give the truth of the matter just as it is. Again, he says something about not seeing it. There, Mr. Editor, was a joke on somebody, and I don't know to this day.

The joke, I suspect, was on Gallup. I will tell you the story and leave you to judge. Soon after coming into this State I was threatened with prosecution for having no right, but found the party threatening had no right himself, and I also found that Mr. Furman owned the State. Shortly a Mr. Goodhue came along claiming to act as Mr. Furman's agent. I acknowledged my willingness to pay. But Mr. Goodhue said (or in language to that effect) that he wanted some place to stop; that if he could stop with me, he should charge nothing for the right.

In about one year Mr. Furman and Mr. Goodhue both called and stopped over night (all free of charge, for we rather like to have beekeepers call on us). In course of our conversation something was mentioned about our writing for the Journal. Mr. F. spoke up rather sharply, saying that he paid cash for everything, and exacted cash from customers. But he had no blank deeds, nor had I. Afterwards I obtained one from Mr. J. E. Benjamin, Mr. F.'s agent, and as Mr. F. only got five dollars, and five dollars went to the agent as commission, he only saw five dollars instead of ten dollars, which he would have seen had he obtained it direct from me. Now you can tell where the joke lies as well as I can. Mr. Editor just let him give us another broadside. We rather enjoy the sport.

E. GALLUP.

Orchard, Iowa.

From the London Gardener's Chronicle.]

Bee Notes.

It would do any beekeeper's heart good to see how my bees have been working at the ivy blossom during the last week or so, both for honey and pollen. Bees here have the monopoly of the ivy this autumn, wasps being scarce in this neighborhood. [This is not the case in some parts of Devonshire, wasps being exceedingly numerous.] I have not as yet destroyed a single nest, though there are a few near; but whether they are plentiful or otherwise, does not matter to me in the slightest, as it is only the poor, weak, or nearly worn out old hives that are molested by them; and I always make it a point to keep my stock up to the best possible strength and condition.

A short time since I met with a curious circumstance in the apiary of one of our magistrates. Having to drive a hive—one in a bee-house containing three stocks—and having made all the preparatory arrangements very carefully, I lifted out the hive with its board, and extremely heavy I found it to be; but upon starting it from its board and turning it up, there were few bees to be seen, only three or four being in it. The combs were full of honey to the very edge; not an ounce more could have been stored in them. I at once came to the con-

clusion that the adjoining hive had made this their storehouse, otherwise it would have been robbed of its contents. There were a few bees at the entrance before I removed it, and after removal I saw some running to and fro in the inside of the house, where the hive had stood. But, more curious still, when I came to examine the stock at the other side of the bee house, I found a large sized box with a super on it, full of comb and bees; but, in addition to this, the bees had built a large quantity of comb, of beautiful quality, all about the outside, the boxes being almost imbedded in it. I could have cut out from thirty to forty pounds of honey, I have little doubt.

An incident somewhat analogous to the above, I met with a few days previously. A cottager at Charleston had a large box-hive in a bee house. He had very kindly furnished the bees with a large super, but had quite forgotten to open the communication from the stock-box. The bees, nothing daunted, constructed combs all over the sides and top of the hive, up to the roof of the bee house. I cut out at least fifty pounds of fine comb honey, filling several large dishes. Bees certainly are strange little creatures, and play some singular freaks occasionally.

Sometime ago I noticed a peculiar looking pollen, which was being conveyed into my hives —long, straggling pieces hanging to the hind legs of the bees. At first I thought it must be gathered from the ivy, but was mistaken. I have reason to believe it was obtained from the Evening Primrose, which had been in bloom in abundance in our gardens before ivy came into flower. The bees were working at the Evening Primrose as late as nine o'clock, some evenings.

A gentleman informed me that his hives were blown over by the easterly gales. He believed they were not much injured, but the bees were dreadfully vicious, and no one dared go near them for a long time afterwards.

GEORGE FOX.

Kingsbridge.

Bee-hunting in Australia.

The wild bee of Australia differs little in size or appearance from our common house-fly, and is stingless. Most of the trees in that country are hollow, and it is in the cavities of the branches that the bees deposit their honey, at a considerable distance from the ground. It is of an aromatic taste, and chiefly gathered from the leaves and blossoms of the different trees that clothe the whole country, from the summits of the mountains to the sea-shore, with the exception of occasional plains, which are of rare occurrence. By the aborigines of Australia this honey is regarded as a great luxury, and it is very interesting to note with what sagacity they contrive to indulge their taste for it—searching it out with infallible eyesight, and with amazing delicacy of touch. Their method of finding these natural hives, which are not numerous, is curious, not only from the fact that the most minute observation and the most delicate manipulations must have been required to enable the inventor of it to succeed, but also because it displays a knowledge of the natural history of the insect, such as I can venture to say, a large portion of the civilized world does not possess.

From the absence in many parts of the bush of Australia of flowers, the little native bee may be seen busily working on the bark of the trees, and unlike the bee of this country, which is ever on the move from flower to flower, it seems to be unconscious of danger. This may arise from the vastness of the solitude in Australia, which are seldom or ever disturbed, except by a passing tribe, or by its own wild denizens, which are far from numerous. The bee is therefore easily approached, and the bright, clear atmosphere of the climate is peculiarly favorable to the pursuit.

A party of two or three natives, armed with a tomahawk, sally forth into the bush, having previously provided themselves with the soft, white down from the breast of some bird, which is very light in texture, and at the same time very bluffy. With that wonderful quickness of sight which practice has rendered perfect, they descry the little brownish, leaden colored insect on the bark, and rolling up an end of the down feather to the finest possible point between their fingers, they dip it in the gummy substance, which a peculiar sort of herb exudes when the stem is broken, they cautiously approach the bee, and with great delicacy of touch, place the gummed point under the hind legs of the bee. It at once adheres. Then comes the result for which all this preparation had been made. The bee, feeling the additional weight, fancies he has done his task and is laden with honey, and flies off from the tree on his homeward jonrney, at not a great distance from the ground. The small white feather is now all that can be discerned, and the hunt at once commences. Running on afoot amid broken branches and stony ground, requires, one would think, the aid of one's eyesight; but with the native Australians it is not so. Without for a moment taking their eyes off the object, they follow it, sometimes the distance of half a mile, and rarely, if ever, fail in marking the very branch where they saw the little bit of white down disappear at the entrance of the hive. Here there is a halt, the prize is found, and they sit down to regain their breath, before ascending the tree, and to light a pipe, which old and young, men, women and children, are extremely partial.

When the rest and smoke are over, with one arm round the tree, and the tomahawk in the other, the blackman notches in the bark, and placing the big toe in the notches of this hastily constructed stair, ascends till he comes to where the branches commence. Then putting the handle of the tomahawk between his teeth, he climbs with the ease and agility of a monkey, till he reaches the branch where last he saw the white down disappear. He then carefully sounds the branches with the back of his tomahawk, till the dull sound as distinct from the hollow sound, tells him where the hive is. A hole is then cut, and he puts his hand in and takes the honey out. If alone, the savage eats of the honey

till he can eat no more, and leaves the rest. But if others are with him, he cuts a square piece of bark, and after having his part of the hive as a reward for his exertion, brings down a mass of honey and comb mixed up together, which though not inviting, is greedily devoured by his partners below.

[For the American Bee Journal.]

Bees in Pella, Iowa.

DEAR BEE JOURNAL:—Many a heartache have we had since we last addressed you, in consequence of losing so many of our bees.

We had heard and read of bee cholera, but hoped we never should see its effects; but vain was our hope, for it made its appearance among our bees in the latter part of last winter, and many stocks were dead before we were aware of its presence. We removed the living stocks to their summer stands, cleaned them out, and fed sugar syrup, but many stocks died after being taken from the cellar.

When the disease disappeared, we had only thirteen (13) hives with bees in them; some had enough bees to cover five (5) frames of comb, and others had not more than sufficient to cover three frames, we had but four (4) stocks that did not show signs of the disease.

At this writing (July 8th) we have nineteen full stocks, and fourteen (14) nuclei of three (3) frames each, and two (2) glass nuclei of one frame each. Our bees have no comb to build this season, as there was good comb and plenty of honey left in the hives by the bees that died.

We are now raising queens from those imported last fall. Owen & Ladd, Brentwood, Tenn., are sadly mistaken when they suppose the foreign queen raisers thought they were sending queens to a Miss Morgan over here in America, as we signed our name with Mrs. prefixed, when we ordered our queens, so you see there was no particular charm in the prefix. But it may be that they are partial to the weaker sex, to test this matter we advise importers to use the names of their better half when ordering foreign queens. Ours came all in good order, and not one died during the winter, only where the bees died with cholera, and no one could expect a queen to live when her colony were all dead.

ARTIFICIAL QUEENS.

Our experience is quite different from that of R. Miller, of Malugan's Grove, Ill. It appears from his article on page 270, American Bee Journal, June, 1872, that not one of twenty (20) queens raised artificially, lived over one year. We know nothing of how he raises what he calls artificial queens, but suppose he must have at least one frame of comb, containing honey, brood and bees, enough to cover and care for the brood and queen cell inserted.

Just the way we raised our queens the two past seasons, and we have never lost one (1) queen thus raised, only when the bees died of disease; have as yet never had a stock of Italian bees left queenless. We now have queens two (2) years old just as prolific as ever they were; one in particular, that we raised last season, and escaped the disease that carried off so many, became very strong very early in the season; we have divided it twice, and now every sash in the hive is full of brood, the outside frames not excepted.

We have but little experience in the mysteries of bee-culture, but think we have been rather a close observer of what has transpired among our own bees.

We use three frames in nuclei this season, as we find it more convenient to keep them strong in bees and supplied with honey.

We do believe queen cells should be constructed in a full stock of bees, and transferred to nuclei well supplied with bees and honey.

As this is our first communication since the death of your excellent Editor, suffer us to say, deeply do we sympathize with you and your many readers, yet we must bow with humble submission to the will of Him who rules all things in wisdom. May his successor be a wise and good man, and the American Bee Journal increase in usefulness, and have yet a wider circulation among beekeepers.

K. A. D. MORGAN.

Bella, Iowa, July 8, 1872.

[For the American Bee Journal.]

Receipts.

METHEGLIN.—Honey, fourteen pounds; warm water, three gallons; yeast, half gill; two ounces hops boiled in one quart water. Mix this water, after straining out the hops, with the rest of the material. Put all into a cask or demijohn, and add enough water to make the whole four gallons; let it work three days, then bottle and tie down the corks. When strong, will intoxicate.

MEAD—Same thing, only about half amount of honey is used.

MEAD—Another receipt. Twelve gallons water; whites of six eggs, mix well, then add twenty pounds honey; boil one hour, then add cinnamon, ginger, cloves, mace, rosemary; as soon as cold put one spoonful yeast to it. Barrel, keeping the vessel full as it works; after working stop close. When fine, bottle for use.

R. H. DIXON.

Canandaigua.

[For the American Bee Journal.]

Old Combs.

MR. EDITOR:—I have for several years practised preserving old combs from the depredations of the moth, when it is not convenient to melt them up at once. Lay them in the sun until they become softened, then roll them up and press them with the hands into hard round balls. In this condition they may be kept without loss or danger for years.

THE AMERICAN BEE JOURNAL.

Washington, August, 1872.

All communications and letters of business should be addressed to

GEO. S. WAGNER,
Office of the American Bee Journal,
WASHINGTON, D. C.

Have any of our bee-keeping friends used Bromo-Chloralum—a rather lately introduced disinfectant? We have within the last month used it for disinfecting damp, mouldy closets, cellars, &c., and have found it to act with great certainty and effect. We think it could be used beneficially in bee-keeping.

1. A small rag saturated with it and placed in the box containing empty combs, would prevent them from becoming mouldy, and would, we believe, keep the moth from depositing her eggs in the combs.

2. In cleaning old bee hives, honey jars, &c., a small portion used in the water, would make the hives sweet and pure.

3. We think that it could be used with the greatest benefit, in cases of foul-brood. It is said to stop all decay of animal matter, and would thus prevent the spread of the disease in the hive. The disinfectant is, when pure, perfectly odorless, so that it could be used, we think, with our detriment, while the bees are in the hive. The combs of the foul-brood hive could be well washed in water containing the disinfectant—and thus saved for further use.

4. Might it not have prevented the bee disease, which caused so much loss last year from one end of the land to the other, by reason of keeping the thin honey from souring?

The above are all hints of what we think might be done with it, not what has been done, but we see no reason why, acting so well in the several instances, in which we tried it, it would not do here. Should it prove successful, it will be a most useful aid to the apiary.

Our friend, Mr. Dadant, sailed on the 13th of July, on board the French steamer, La Ville de Paris, for Italy. We hope that we may have from him, while absent, interesting accounts of the state of bee-keeping, &c., in Italy and such other places as he may visit. His son, Camille P. Dadant, of Hamilton, Hancock county, Illinois, will act as his agent during his absence.

Novice desires us to say that the metal corners are patented, but that everyone is free to use them without a "right," or to use any modification of them they think proper; they (A. J. Root & Co.,) only reserving the *exclusive* right to manufacture them for sale.

Judging from the accounts thus far received, there will be but a small yield of box honey this season.

VILLE'S CHEMICAL MANURES.—Fesquet, translator. Henry Carey Baird, publisher, 406 Walnut street, Philadelphia, Pennsylvania. Price $1.25, sent by mail, free of postage, to any part of the United States. Coming from the noted Industrial Publisher, Baird, is sufficient guarantee of the value of this work.

THE MODEL POTATO.—An exposition of its proper cultivation; the cause of its rotting; the remedy therefor; its renewal, preservation, productiveness, and cooking, by Dr. John McLaurin. Edited, with annotations, by R. T. Trall, M. D., 12mo., 102 pages; price 50 cents. S. R. Wells, publisher, 389 Broadway, New York. The work is the result of twenty years' experience and observation.

Beekeepers' Convention.

The CENTRAL IOWA BEEKEEPERS' ASSOCIATION will held their next session during the IOWA STATE FAIR, September 10th, 11th and 12th, 1872.

Visitors pass over all railroads "in Iowa" for one-half fare. Some of Iowa's noted beekeepers will be present. Come one, come all, and have a general good time.

Tipton, Iowa. GEO. W. BARCLAY, *Sec'y.*

CORRESPONDENCE.

This season is rather more favorable than last.
WALTER HEWSON.
Kent, Eng., July 1, 1872.

Bees are doing very well here this season, that is, what few wintered over. J. SMITH.
Willow Branch, Ind., July 2, 1872.

This has been so far, in this neighborhood, a poor season for bees; few swarms and little honey. J. F. BROWN.
Winchester, Va., July 8, 1872.

The bees had a very good run here last week on clover, but it has been raining this week, so that we have gained nothing.
Binghamton, N. Y., June 27, 1872.

The honey harvest is very fine here. The linden trees are unusually full of bloom.
Allenton, Mo., June 25, 1872. WM. HARRIS.

Bees done very poorly here last winter; about half the colonies died, the balance were in very poor condition, but have done very well this summer. Just now there is a scarcity of forage, and they lie idle in front of the hives. Long live the AMERICAN BEE JOURNAL! J. B. RAPP.
Owensville, O., July 15, 1872.

This season has been poor for bees. No surplus honey of any account. The bees had filled their hive, and have enough to winter on, but the nights were too cold for surplus honey.

Wenham, Mass., July 15, 1872. H. ALLEY.

My bees are flourishing. My stock has increased from twenty nine to sixty-two hives by artificial swarming. I use the two-story Langstroth hive with double sets of frames. I have mostly Italian bees, and will soon have all my stocks Italianized. I have one of R. R. Murphy's honey extractors, which works splendidly, and have taken about 1000 pounds of honey, and hope to be able to take as much more.

N. P. ALLEN.

Smith's Grove, Ky., July 3, 1872.

The season for bees has been better than it has been for several years, although late, a majority of the bees died last winter generally for want of stores. I wintered my eighty colonies without loss, kept them in my cellar five months, find no trouble in wintering in my cellar, while my neighbors loose from half to all wintering on their summer stands. S. SANDFORD.

Lima, Allen Co., O.

Thus far bees have done well here, though they could not swarm until June, owing to last season being such a poor one, and the winter very severe. I started this spring with five colonies, and have fourteen now. All the swarms that come off this month, I will put in the weakest, and make them all strong by winter. I have made a cap that covers the whole hive with four inches space on each side and back end, and high enough to cover surplus boxes. Movable bottom, with sides and back end that drop over the bottom board to keep out water. I can stuff straw all around and on top for winter. I use the Langstroth hive. M. L. WILLIAMS.

Ashland, Ky., July 15, 1872.

I have nothing new to report in regard to foulbrood, as my apiary is now entirely free from it. I can report twenty as healthy and prosperous colonies as the most enthusiastic beekeeper could wish. (See vol. vi., p. 211.)

Bees, as a general thing, wintered well in this place, and notwithstanding the spring was a month later than last year, swarming commenced about the same time; the first swarm of the season coming off May 15th or 16th. But as there was no forage from the first to the middle of June, all breeding and queen raising ceased, and there have been no swarms of consequence since then. From the middle of June till the present time, honey has been abundant and been gathered rapidly, one of my colonies having stored monthly during this time nearly sixty pounds in surplus boxes, which for this region is doing remarkably well. I have received from Mr. Peabody a new knife, very ingeniously made, which is just the thing needed to make the extractor complete, as it works easily and rapidly without the use of hot water.

It is not in the market this year, but I hope for the benefit of those who have steamed over hot water with the thermometer at 90° in the shade, he will supply the public by another season. E. P. ABBÉ.

New Bedford, Mass., July 3, 1872.

I would like very much to see a correct statement of the difference in point of merit as honey gatherers, between the Italian bees and our common black bees; I would be glad to have the statement from some honest beekeeper who does not make raising queens a business; as it is very likely that a man who wishes to sell a large lot of queens might be induced to exaggerate the value of the little foreigner a little above their true merits. Cotton is king in my locality; about one man in thirty keeps bees, raising honey for his own table, none to sell. We use a blank box hive, hollow log hives, old nail kegs, flour barrels, &c. Our farmers to a great extent, think beekeeping a small affair, a piccayune business; bees uncertain and unreliable property; movable comb hives a swindle; Italian bees a humbug.

I am one who wish to wake our people up to their interest. Therefore give us facts; no use to undertake to overçome incredulity by exaggeration. W. E. FREEMAN.

Olustee Creek P. O., Ala., July 8, 1872.

I just happened to think that I would like to see the commencement of the new volume of the Journal. Till rather lately I have been somewhat dull with regard to bee business. My bees, fifty-five stocks, came out all right in the spring, but about two weeks later than last year. They have done well on the fruit blossoms, but then came on a large spell of cold, rainy weather, which prevented them from working until sometime after the white clover blossomed, and even when I supposed the weather was suitable for them to gather honey, not a bee could be found on the white clover. I suppose the long cold rain prevented the accumulation of honey in the flowers. They began a little earlier in the Alsike, but as that was mostly winter-killed, did not amount to much. For about two weeks past, they have worked quite well, and I am taking out some honey. The last season I took all my surplus honey from the side of the brood by taking out the frames the honey was stored in, even if a little brood was stored in some of them, I could extract the honey and return some to the hive without injury to the bee brood. This practice gives an opportunity to know the interior condition of the hive, so that any frame not suitable can be put in its place. Last year I took out all old block and thick combs, and such as had much old sour bee-bread, in season to have them filled with healthy comb, and am of opinion that by so doing prevented much disease that bees are subject to, as I consider such comb very unhealthy if remaining long in the hive.

Genoa, Ill. A. STILES.

The 4th of July is upon us, and finds the honey supply the most meager for many years in this portion of Ohio. About twenty-four of my colonies, black and yellow, went by the board during the past winter with that yet unnamed disease, which we might just as well call bee cholera, and be done with it.

No condition or style of hive was proof against it, for I feel very sure that the disease was inherent in the honey gathered from some unusual source late in fall. As a proof of this, when overhauling my dead colonies in the spring, I found quite a showing of uncapped honey in the combs, both sour and bitter, which, when consumed by the bees, would most assuredly produce disease during a long cold winter like the last.

The honey extractor, I have no doubt, would have proved a remedy, if we only knew when the conditions were upon us, by removing all such honey and casting it to the dogs, and supplying its place with coffee sugar-syrup, which, by the way, is the most healthful and complete artificial food I have ever used for bees.

Athens, O., July 4, 1872. J. W. BAYARD.

Bees not doing much. A three or four weeks' drought dried up the white clover, our chief source, but I am living in hopes of a good yield from buckwheat. I have forty stocks, all in Langstroth hives, and about half of them Italians, which have done much the best.

J. L. WOLFENDER.

Adams, Walworth Co., Wis., July 17, 1872.

Bees in this section are making very little honey. No new swarms. The drought is general and very severe. H. L. BUSH.

Ottawa, Ills., July 16, 1872.

DEAR BEE JOURNAL:—As I have not seen anything from this section in regard to beekeeping, I will drop you a line. There are no extensive beekeepers in this vicinity. There are a number of persons that have a few colonies in box hives or round logs. Bees wintered well in this section; I wintered sixteen colonies out of seventeen on their summer stands, without any protection whatever. As a general thing, bees have not swarmed much here this season; I left part of mine to swarm, and part I divided. All that I divided are doing well; I shall practice dividing altogether next season, for I think it much the best way, and saves so much attention during swarming season. My bees are the common black bees; I have not tried the Italians yet. Will close by saying: Success to the American Bee Journal! WM. H. BALL.

Sayòrook, Ills., July 18, 1872.

EDITOR OF THE AMERICAN BEE JOURNAL:—So far this has been a bad season for bees with me. From the middle of June until the 8th of July, bees in this locality gathered nothing, and before the 1st of July some stocks were so destitute that they devoured all their brood to keep themselves from starving. In two or three cases I saw the bees all on the outside of the hive (queen and all), and their owners "knew they would swarm right off;" but you ought to see their lip fall when I turned them over (the hives, I mean) and showed them the inside! People are beginning around here to own up that the Italians may be (a leetle) better than the blacks.

J. E. BENJAMIN.

Rockford, Iowa, July 17, 1872.

Bees and Honey in France.

Honey and wax are harvested twice a year in France. The earlier occurs according to location, from the latter part of May to the middle of July. This is called the summer harvest, and is usually better both in quantity and quality than the fall harvest. The honey is finer, better flavored, more aromatic and more easily drained from the wax. It is a pure nectar, collected from a great variety of flowers, and is little contaminated with pollen, particularly if gathered in supers.

At the beginning of July the honey harvest is usually at an end in Gatinais, while it is then just beginning in Picardy and at Troyes. In some of the southern departments the harvest commences a few weeks earlier than in the northern.

In the departments of Eure and Loire, the general estimate that the product of a good stock of bees is five per cent. on the capital invested. The yield of honey and wax in the four departments, Gironde, Landes, Lot et Garonne, and Dordogne, amounted to about two millions of pounds in the year 1866. In 1867, the summer harvest of honey in Gatinais, amounted to 900,000lbs., which was regarded as a fair average yield.

The fall harvest begins about the 15th of September, and continues till the end of December, according to the greater or less abundance of the yield, and the state of the weather.

At the summer harvest only a portion of the honey and wax is taken, a sufficient supply being always left in the hives to ensure the safety of the colonies in the event of an unfavorable season or a deficiency of pasturage. The largest portion of the honey harvested in the fall, is derived from buckwheat, heather and late blossoming plants; and is much inferior to the summer honey in quality and flavor. It is also darker in color, and very soon crystallizes. It does not drain so readily from the wax, commonly requiring heat and pressure to effect a separation, thus deteriorating the product.

The honey is stored in large vessels or barrels, and care is always taken that the place where it is deposited is dry and warm. Watery honey deposited in a damp place soon spoils, and even the best honey will in time be injured, if exposed to dampness.

Let the harvest be good or bad, the beekeepers always keep honey enough on hand to carry their bees safely through the longest winter.

[For the American Bee Journal.]

The July Number.

Our much esteemed JOURNAL for July is before us, and its contents have been pretty thoroughly digested. We think it would even astonish "Novice" to see the way we "go" for its contents. We find so many good things therein, that we can only briefly notice the most important. We read Mr. Langstroth's article upon the color of Italian queens, as when first published, nine years ago. "Dronings" makes

his appearance. Of course we must have a *few* drones in "our large family" to make its harmony complete.

We think the value of basswood is not overestimated, and we can hardly see how it could be, for we regard it as being of the greatest value for bee-pasturage.

We think that the case of "successful destruction" could not be well improved upon, for it came nearly being complete. "Imprudence of bee-keeping!" Surely, we did not know before how imprudently we had been acting for the past three or four years. We had not even thought of how we were working against our own best interest by advising others to engage in bee-keeping, and endeavoring to tell them how to be successful. We can now plainly see that in doing unto others as we would wish to be done by, that we have been guilty of the "most supreme folly." Instead of letting our light shine, let us hereafter keep it securely covered with a bushel, for fear that some one else may find pleasure and profit in our lovely pursuit.

But here comes "Gallup" with his one story hive. Surely, friend "Novice," you *must* see this time.

We too are sincerely sorry to see such hard and unkind words pass between friends Price and Dadant. Can they not come to some amicable settlement of their difference? We trust they may. And here is "Novice," just as interesting and agreeable as of old. We sometimes wish, and no doubt others do also, that he would be a little more explicit about some things, especially, for instance, he does not tell us *half* enough about his prolific queen. We should like to know if her workers are the most industrious? Or, in other words, does her hive collect the most honey? We usually find that the worker progeny of an extra prolific queen to be models of industry, but not always. We often see equally strong colonies, one of which will far exceed the other in gathering honey, and that too *under* precisely similar conditions. Nor do we always find the strongest colonies storing the most honey, any more than that the largest cow yields the most butter. Do not think that we are condemning strong stocks; for as a rule they are decidedly the most profitable, but then there are exceptions to this rule as well as others.

And "Native" is going to effectually destroy, at a single stroke, the fair reputation of our little yellow "imported" pets. Why we should as soon think of dispensing with the aid of the movable frame as to throw *them* overboard. Have they not been fully and fairly tested? And are they not "superior to the native?" Have they not received the emphatic *endorsement* of our best and most successful beekeepers? Can any one tell us what has become of Alley, Argo and Beckford, Nesbit and Quinby, and many others who used to delight our readers with their sensible and interesting articles? Can they not be induced to let us hear from them once more?

Well, Mr. Editor, we find that we have overlooked many interesting items, and have not said all we should like; but we, like "Novice," are *so* tired and sleepy that we cannot write any more, for we too have had "fun" to-day. Good night all; and now for fair visions of mel-extractors and sweet dreams of the basswood honey harvest. HERBERT A. BURCH.

South Haven, Mich., July 15, 1872.

[For the American Bee Journal.]

MR. EDITOR:—I hope I do not take too much liberty by asking you a question or two in respect to bee-culture.

One year ago I wintered about 40 swarms of bees and most of them came out light last spring. Last spring or summer I had 14 or 15 new swarms which I put in the Quinby non-swarmer hive. The swarms came so late that they just had honey enough to last till buckwheat, and then gathered quite a quantity of buckwheat honey and capped but little. I filled the space (filled with boxes in the honey season) with clear wheat straw, and left them on their summer stands.

On examining them a short time ago, I found all but three or four of the swarms dead, and the remaining ones nearly so, and all having more or less honey, but dying apparently with dysentery, the honey and hives giving evidence of it.

I had two old swarms that were wintered a year ago that have died, one hive that has, I should think, 40 lbs. of capped honey at the entrance of the hive, and some of the honey giving evidence of a very bad stage of dysentery.

Now through your paper I should like to know, what was the cause of this loss? What the remedy, if any, and how to prevent a like occurrence? A. HEMSTEAD.

Waverly, Tioga Co., N. Y.

[For the American Bee Journal.]

MR. EDITOR:—On June 17th, whilst I was engaged making an artificial swarm, about 5 o'clock P. M., my baby boy, sixteen months old, stirred up a stock of bees, and was stung very badly. His sufferings were so severe as to almost throw him into spasm; he had a wild look out of his eyes, and I was fearful that he had poison enough in him to kill him. I at once determined to strip him and wrap him in a wet sheet. I did this after extracting all the stings. In two or three minutes he was asleep, and slept twelve hours, seemingly sweet sleep, awaking only twice to be nursed. The wet sheet was put under and over the child, just leaving it room to breathe freely. The child perspired profusely, and thus threw the poison out of its system. It made a complete cure with but little swelling.

N. P. ALLEN.

Smith's Grove, Ky., July 3, 1872.

Walter P. Bean, of Maysville, kept thirty-two swarms of bees through last winter. He kept them in his cellar, the hives standing over potatoes, which took up the moisture, so that no mould troubled the bees. MAINE FARMER.